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UNITED STATES GEOLOGICAL SURVEY

GEORGE OTIS SMITH, Director

Bulletin 643

SPIRIT LEVELING IN SOUTH DAKOTA

1896 TO 1915, INCLUSIVE

R. B. MARSHALL, CHIEF GEOGRAPHER



WASHINGTON

GOVERNMENT PRINTING OFFICE

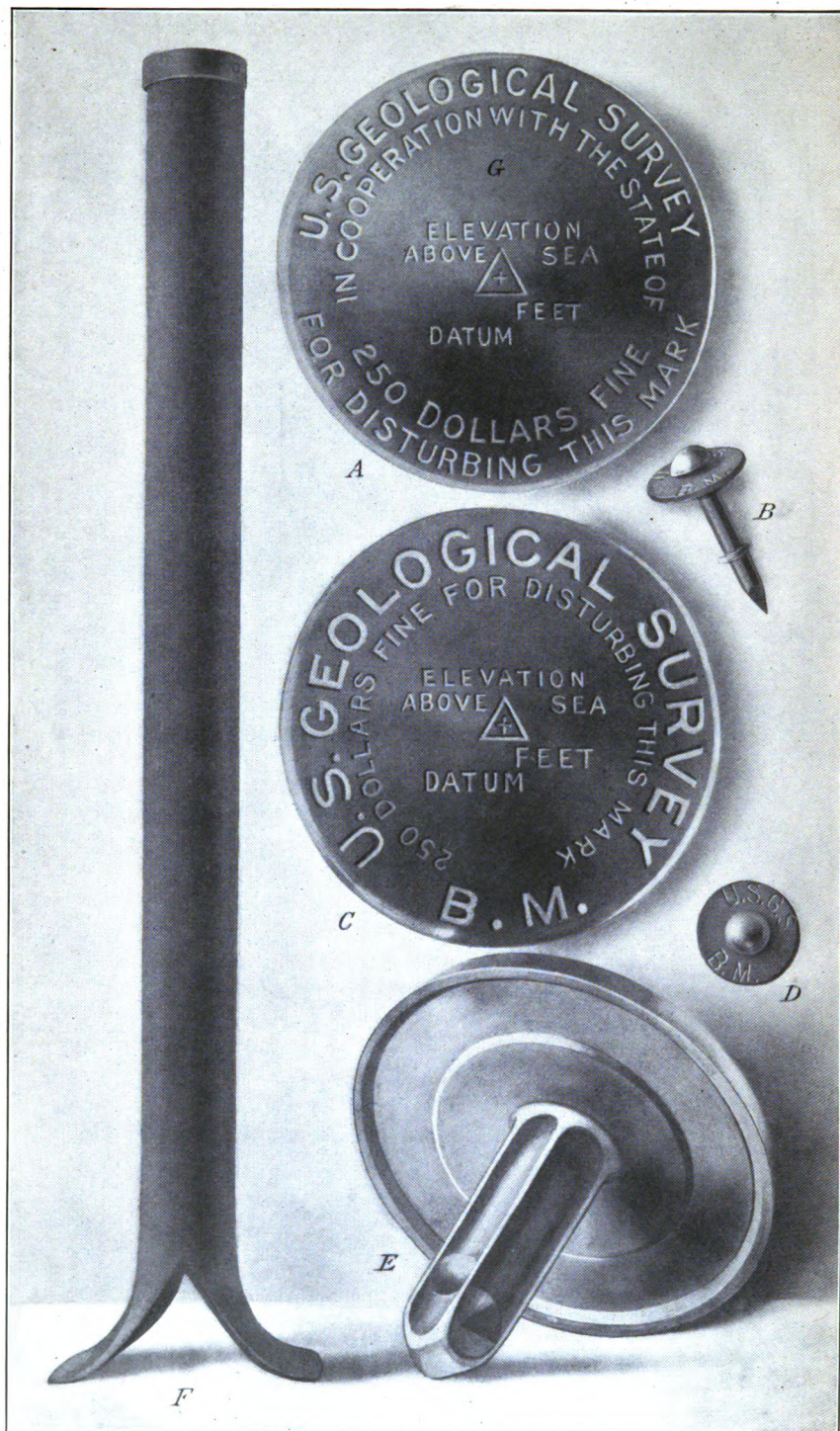
1916

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GEOLOGICAL SURVEY BENCH MARKS.

- A*, Tablet used in cooperating States. The State name is inserted at *G*.
B and *D*, Copper temporary bench mark, consisting of a nail and copper washer.
A, *C*, and *E*, Tablets for stone or concrete structures.
F, Iron post used where there is no rock.

SPIRIT LEVELING IN SOUTH DAKOTA, 1896 TO 1915, INCLUSIVE.

R. B. MARSHALL, Chief Geographer.

INTRODUCTION.

Previous publication.—All results of spirit leveling in South Dakota previously published by the United States Geological Survey in Bulletin 472, and all the results of later work are included in this report, arranged by quadrangles. Elevations are based on heights of bench marks along precise level lines of the Coast and Geodetic Survey as adjusted in 1912, and on checked primary leveling of the Missouri River Commission.

Personnel.—The field work in the western part of the State from 1896 to 1906, inclusive, was done under the general direction of E. M. Douglas, geographer. That for the remainder of the State, previous to 1903, was under the general direction of J. H. Renshawe, geographer, and from 1903 to 1906, inclusive, under H. M. Wilson, geographer. Since 1907 the work has been under E. C. Barnard and Sledge Tatum, geographers, under the general direction of R. B. Marshall, chief geographer. The names of the respective levelmen are given in the introductions to the several lists. The office work of computation, adjustment, and preparation of lists was done mainly by S. S. Gannett, geographer, under the general direction of E. M. Douglas, geographer.

Classification.—No precise leveling has been done by the United States Geological Survey in this State.

For primary lines standard Y levels are used; lines are run in circuits or are closed on precise lines, with an allowable closing error in feet represented by $0.05\sqrt{D}$, in which D is the length of the circuit in miles, sufficient care being given to the work to maintain this standard. For circuit closures careful office adjustments are made, the small outstanding errors being distributed over the lines.

Bench marks.—The standard bench marks are of two forms. The first form is a circular bronze or aluminum tablet (*C* and *E*, Pl. I),

$3\frac{1}{2}$ inches in diameter and one-quarter inch thick, having a 3-inch stem, which is cemented into a drill hole in solid rock in the wall of some public building, a bridge abutment, or other substantial masonry structure. The second form (*F*, Pl. I), used where masonry or rock is not available, consists of a hollow wrought-iron post $3\frac{1}{2}$ inches in outer diameter and 4 feet in length, which is set about 3 feet in the ground. The bottom is spread out to a width of 10 inches in order to give a firm bearing on the earth. A bronze or aluminum-bronze cap is riveted upon the top of the post. A third style of bench mark with abbreviated lettering (*B* and *D*, Pl. I) is used for unimportant points. This consists of a special copper nail $1\frac{1}{2}$ inches in length driven through a copper washer seven-eighths inch in diameter. The tablets as well as the caps on the iron posts are appropriately lettered, and cooperation by States is indicated by the addition of the State name (*G*, Pl. I).

The numbers stamped on the bench marks described in the following pages represent the elevations to the nearest foot as determined by the levelman. These numbers are stamped with three-sixteenths-inch steel dies on the tablets or post caps, to the left of the word "feet." The office adjustment of the notes and the reduction to mean sea level datum may so change some of the figures that the original markings are 1 or 2 feet in error. It is assumed that engineers and others who have occasion to use the bench-mark elevations will apply to the Director of the United States Geological Survey at Washington, D. C., for the adjusted values, and will use the markings as identification numbers only.

Datum.—All elevations determined by the United States Geological Survey and the United States Coast and Geodetic Survey are referred to mean sea level, which is the level that the sea would assume if the influence of winds and tides was eliminated. This level is not the elevation determined from the mean of the highest and the lowest tides, nor is it the half sum of the mean of all the high tides and the mean of all the low tides, which is called the half-tide level. *Mean sea level is the average height of the water, all stages of the tide being considered.* It is determined from observations made by means of tidal gages placed at stations where local conditions, such as long, narrow bays, rivers, and like features, will not affect the height of the water. To obtain even approximately correct results these observations must extend over at least one lunar month, and if accuracy is desired they must extend over several years. At ocean stations the half-tide level and the mean sea level usually differ but little. It is assumed that there is no difference between the mean sea levels determined from observations in the Atlantic Ocean, the Gulf of Mexico, and the Pacific Ocean.

The connection with tidal stations for bench marks in certain areas that lie at some distance from the sea coast is still uncertain, and this fact is indicated by the addition of a letter or word to the right of the word "DATUM" on tablets or posts. For such areas corrections for published results will be made from time to time as the precise-level lines of the United States Geological Survey, the United States Coast and Geodetic Survey, or other Government organizations are extended.

Topographic maps.—Topographic maps of the following quadrangles wholly or partly in South Dakota have been published by the United States Geological Survey up to June 1, 1916. They may be obtained for 10 cents each or \$3 for 50, on application to the Director of the Survey at Washington, D. C.

Aberdeen. ¹	Huron.
Aladdin (Wyo.-S. Dak.-Mont.).	Mitchell.
Alexandria.	Newcastle (Wyo.-S. Dak.).
Belle Fourche. ²	Newell.
Byron.	Northville.
Canton (S. Dak.-Iowa).	Oelrichs (S. Dak.-Nebr.).
Columbia 30' (S. Dak.-N. Dak.). ³	Olivet.
Columbia 15'. ³	Parker.
Conde. ¹	Rapid.
Deadwood. ⁴	Redfield.
De Smet.	Redwater. ²
Edgemont (S. Dak.-Nebr.).	St. Onge. ²
Elk Point (S. Dak.-Nebr.-Iowa).	Savo (S. Dak.-N. Dak.). ³
Ellendale 30' (S. Dak.-N. Dak.). ⁵	Spearfish. ⁴
Ellendale 15' (N. Dak.-S. Dak.). ⁵	Sturgis. ⁴
Harney Peak.	Sundance (Wyo.-S. Dak.).
Hecla (S. Dak.-N. Dak.). ³	Vale.
Hermosa.	

¹ Conde sheet, on scale of 1:62,500, has been reduced and forms part of Aberdeen sheet, on a scale of 1:125,000.

² Redwater and St. Onge sheets, on scale of 1:62,500, have been reduced and form parts of Belle Fourche sheet, on scale of 1:125,000.

³ Columbia 15', Hecla, and Savo sheets, on scale of 1:62,500, have been reduced and form parts of Columbia 30' sheet on scale of 1:125,000.

⁴ Spearfish and Sturgis sheets, on scale of 1:62,500, have been reduced and form parts of Deadwood sheet, on scale of 1:125,000.

⁵ Ellendale 15' sheet, on scale of 1:62,500, has been reduced and forms part of Ellendale 30' sheet, on scale of 1:125,000.

PRIMARY LEVELING.

Canton, Elk Point, Olivet, and Parker quadrangles.

BONHOMME, CLAY, HUTCHINSON, LINCOLN, TURNER, UNION, AND YANKTON COUNTIES.

The elevations in the following list were determined by primary leveling extended from bench marks of the Missouri River Commission and the United States Coast and Geodetic Survey and accord with the 1912 adjustment. A correction of 0.525 foot has been subtracted from the values published in part 3 of the Report of the Chief of Engineers United States Army, for 1894, at and west of Elk Point, a junction point with a precise-level line of the Coast and Geodetic Survey, crossing the Elk Point and Canton quadrangles along the Chicago, Milwaukee & St. Paul Railway.

The leveling was done in the Canton, Olivet, and Parker quadrangles by Alfred Tyler in 1896, and in the Elk Point quadrangle by D. C. Wray in 1898.

The Iowa elevations in the Canton and Elk Point quadrangles and the Nebraska elevation in the Elk Point quadrangle are given in the spirit-leveling bulletins for those States, 569 and 572, respectively.

CANTON QUADRANGLE.

[Latitude 43°-43° 30'; longitude 96°-30'-97°.]

From Centerville east along Chicago & North Western Ry. to line between R. 52 W. and R. 51 W., thence south to line between Tps. 95 and 96 N., east to line of Rs. 48 and 49 W., north to line of Tps. 96 and 97 W., west to line of Rs. 51 and 52 W., and southwest to Centerville.

T. 95 N., R. 51 W., northwest corner of sec. 6; iron post stamped	Feet.
"Ynktn 1254"-----	1, 253. 061
T. 95 N., R. 50 W., northwest corner of sec. 6; iron post stamped	
"Ynktn 1422"-----	1, 421. 296
T. 95 N., R. 49 W., northwest corner of sec. 6; iron post stamped	
"Ynktn 1390"-----	1, 389. 738
T. 95 N., R. 48 W., northwest corner of sec. 6; iron post stamped	
"Ynktn 1438"-----	1, 437. 093
T. 96 N., R. 48 W., northwest corner of sec. 6; iron post stamped	
"Ynktn 1485"-----	1, 484. 830
T. 96 N., R. 49 W., northwest corner of sec. 6; iron post stamped	
"Ynktn 1538"-----	1, 537. 194
T. 96 N., R. 50 W., northwest corner of sec. 6; iron post stamped	
"Ynktn 1372"-----	1, 371. 701
T. 96 N., R. 51 W., northwest corner of sec. 6; iron post stamped	
"Ynktn 1217"-----	1, 216. 203
From sec. 18, T. 97 N., R. 52 W., northeast to Davis, thence east to line of Rs. 48 and 49, thence northwest to sec. 3, T. 98 N., R. 49 W.	
T. 97 N., R. 51 W., northwest corner of sec. 6; iron post stamped	
"Ynktn 1273"-----	1, 272. 446
T. 97 N., R. 50 W., northwest corner of sec. 6; iron post stamped	
"Ynktn 1299"-----	1, 298. 770

T. 97 N., R. 49 W., northwest corner of sec. 6; iron post stamped	Feet.
"Ynktn 1337"-----	1, 336. 479
T. 97 N., R. 48 W., northwest corner of sec. 6; iron post stamped	
"Ynktn 1274"-----	1, 273. 671

From Parker southeast along Chicago, Milwaukee & St Paul Ry. and highway to corner of Tps. 98 and 99 N., Rs. 51 and 52 W., thence east along township line to line of Rs. 48 and 49 W., thence northwest to sec. 7, T. 100 N., R. 49 W., thence west and south to sec. 15, T. 100 N., R. 53 W. (part of line).

T. 98 N., R. 51 W., northwest corner of sec. 6; iron post stamped	
"Ynktn 1335"-----	1, 334. 442
T. 98 N., R. 50 W., northwest corner of sec. 6; iron post stamped	
"Ynktn 1349"-----	1, 348. 553
T. 98 N., R. 49 W., northwest corner of sec. 6; iron post stamped	
"Ynktn 1372"-----	1, 371. 442
T. 98 N., R. 48 W., northwest corner of sec. 6; iron post stamped	
"Ynktn 1329"-----	1, 329. 231
T. 100 N., R. 49 W., northwest corner of sec. 7; iron post stamped	
"Ynktn 1484"-----	1, 483. 566
T. 100 N., R. 50 W., northwest corner of sec. 7; iron post stamped	
"Ynktn 1504"-----	1, 504. 510
T. 100 N., R. 51 W., northwest corner of sec. 7; iron post stamped	
"Ynktn 1534"-----	1, 533. 850

From sec. 30, T. 99 N., R. 51 W., north along range line to line between Tps. 99 and 100 N., thence east to line of Rs. 49 and 50 W., thence southeast to sec. 34, T. 99 N., R. 49 W.

T. 99 N., R. 51 W., northwest corner of sec. 6; iron post stamped	
"Ynktn 1448"-----	1, 447. 667
T. 99 N., R. 50 W., northwest corner of sec. 6; iron post stamped	
"Ynktn 1461"-----	1, 461. 006
T. 99 N., R. 49 W., northwest corner of sec. 6; iron post stamped	
"Ynktn 1419"-----	1, 418. 744

PARKER QUADRANGLE.

[Latitude 43°-43° 30'; longitude 97°-97° 30'.]

From Yankton northeast along Chicago & North Western Ry. to Centerville, thence northwest to Parker.

Wakonda, in front of town hall, sec. 33, T. 95 N., R. 53 W.; iron post stamped "Ynktn 1390"-----	1, 389. 911
Hurley, in center of park, sec. 27, T. 98 N., R. 53 W.; iron post stamped "Ynktn 1293"-----	1, 292. 561
T. 98 N., R. 53 W., northeast corner of sec. 4; iron post stamped "Ynktn 1300"-----	1, 299. 439
Parker, in foundation of courthouse, sec. 17, T. 99 N., R. 53 W., bronze tablet stamped "Ynktn 1371"-----	1, 372. 081

From Hurley south and west to sec. 15, T. 97 N., R. 54 W., thence east and south to T. 95 N., R. 53 W.

T. 97 N., R. 53 W., northeast corner of sec. 20; iron post stamped "Ynktn 1281"-----	1, 280. 836
T. 97 N., R. 54 W., northeast corner of sec. 21; iron post stamped "Ynktn 1360"-----	1, 359. 967

T. 96 N., R. 54 W., northeast corner of sec. 1; iron post stamped "Ynktn 1382"-----	Feet. 1,382.660
Irene, near township corners, sec. 1, T. 95 N., R. 54 W.; iron post stamped "Ynktn 1371"-----	1,371.316
T. 95 N., R. 53 W., northeast corner of sec. 4; iron post stamped "Ynktn 1323"-----	1,823.002

From Parker along Chicago, Milwaukee & St. Paul Ry. northwest to Marion, thence southwest to T. 98 N., R. 57 W.

Freeman, southeast corner of Windmill Square, sec. 35, T. 99 N., R. 56 W.; iron post stamped "Ynktn 1514"-----	1,513.923
--	-----------

From Parker northeast to sec. 15, T. 100 N., R. 53 W., thence north and west to sec. 10, T. 100 N., R. 54 W., thence south to sec. 15, T. 97 N., R. 54 W.

T. 100 N., R. 53 W., northeast corner of sec. 21; iron post stamped "Ynktn 1402"-----	1,402.585
T. 100 N., R. 54 W., northeast corner of sec. 12; iron post stamped "Ynktn 1358"-----	1,358.818
T. 99 N., R. 54 W., northeast corner of sec. 21; iron post stamped "Ynktn 1454"-----	1,454.718
T. 98 N., R. 54 W., northeast corner of sec. 4; iron post stamped "Ynktn 1412"-----	1,412.841
T. 98 N., R. 54 W., northeast corner of sec. 21; iron post stamped "Ynktn 1346"-----	1,346.686
T. 97 N., R. 54 W., northeast corner of sec. 4; iron post stamped "Ynktn 1302"-----	1,302.104

From Marion west and north to sec. 12, T. 100 N., R. 55 W., thence northwest to sec. 9, thence south to sec. 15, T. 97 N., R. 55 W., thence east to sec. 15, T. 97 N., R. 54 W.

T. 99 N., R. 55 W., northeast corner of sec. 4; iron post stamped "Ynktn 1444"-----	1,444.558
T. 100 N., R. 55 W., northeast corner of sec. 9; iron post stamped "Ynktn 1397"-----	1,397.445
T. 99 N., R. 55 W., northeast corner of sec. 21; iron post stamped "Ynktn 1474"-----	1,473.802
T. 98 N., R. 55 W., northeast corner of sec. 4; iron post stamped "Ynktn 1525"-----	1,525.040
T. 98 N., R. 55 W., northeast corner of sec. 21; iron post stamped "Ynktn 1434"-----	1,433.968
T. 97 N., R. 55 W., northeast corner of sec. 4; iron post stamped "Ynktn 1615"-----	1,614.839
T. 97 N., R. 55 W., northeast corner of sec. 21; iron post stamped "Ynktn 1683"-----	1,683.002

From sec. 15, T. 97 N., R. 55 W., south to sec. 30, T. 94 N., R. 54 W.

T. 96 N., R. 53 W., northeast corner of sec. 1; iron post stamped "Ynktn 1456"-----	1,455.924
T. 95 N., R. 55 W., northwest corner of sec. 6; iron post stamped "Ynktn 1311"-----	1,310.742
T. 95 N., R. 55 W., northeast corner of sec. 1; iron post stamped "Ynktn 1481"-----	1,481.050

From sec. 13, T. 98 N., R. 57 W., east 3 miles, thence north and west to sec. 12,
T. 100 N., R. 57 W.

T. 98 N., R. 56 W., northeast corner of sec. 21; iron post stamped	Feet.
"Ynktn 1599"-----	1, 599. 546
T. 99 N., R. 56 W., northeast corner of sec. 4; iron post stamped	
"Ynktn 1445"-----	1, 445. 617

OLIVET QUADRANGLE.

[Latitude 43°-43° 30'; longitude 97° 30'-98°.]

From Yankton along Chicago, Milwaukee & St. Paul Ry. northwest to Scotland,
thence northeast to sec. 24; T. 98 N., R. 57 W.

Menno, crossroads, near mill; iron post stamped "Ynktn 1327"-----	1, 327. 134
T. 98 N., R. 57 W., northeast corner of sec. 24; iron post stamped	
"Ynktn 1403"-----	1, 403. 379

From sec. 9, T. 97 N., R. 57 W., south 5 miles, thence east to corner of Tps. 96
and 97 N., Rs. 55 and 56 W.

T. 96 N., R. 57 W., northeast corner of sec. 4; iron post stamped	
"Ynktn 1290"-----	1, 290. 484
T. 96 N., R. 57 W., northeast corner of sec. 1; iron post stamped	
"Ynktn 1307"-----	1, 307. 395

From sec. 36, T. 95 N., R. 57 W., north to sec. 1, thence west along township
line to line between Rs. 60 and 61 W., thence north 6 miles, thence east along
township line, and southeast to Scotland.

T. 95 N., R. 57 W., northeast corner of sec. 1; iron post stamped	
"Ynktn 1442"-----	1, 442. 021
T. 95 N., R. 58 W., northeast corner of sec. 1; iron post stamped	
"Ynktn 1338"-----	1, 337. 902
T. 95 N., R. 59 W., northeast corner of sec. 1; iron post stamped	
"Ynktn 1399"-----	1, 398. 500
T. 95 N., R. 60 W., northeast corner of sec. 1; iron post stamped	
"Ynktn 1526"-----	1, 525. 915
T. 95 N., R. 61 W., northeast corner of sec. 1; iron post stamped	
"Ynktn 1596"-----	1, 595. 780
T. 96 N., R. 61 W., northeast corner of sec. 1; iron post stamped	
"Ynktn 1584"-----	1, 583. 872
T. 96 N., R. 60 W., northeast corner of sec. 1; iron post stamped	
"Ynktn 1446"-----	1, 445. 596
T. 96 N., R. 59 W., northeast corner of sec. 1; iron post stamped	
"Ynktn 1355"-----	1, 355. 161

At Olivet.

Olivet, southwest corner of foundation of courthouse; bronze tablet stamped "Ynktn 1221"-----	1, 220. 724
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From corner of Tps. 96 and 97 N., Rs. 58 and 59 W., north along range line to
Tps. 98 and 99 N., thence west along township line to Rs. 59 and 60 W.,
thence north to line of secs. 1-12, T. 100, R. 60 W., thence west 6 miles,
thence south to corner of Tps. 97 and 98 N., Rs. 60 and 61 W., thence east to
corner of Tps. 97 and 98 N., Rs. 58 and 59 W.

T. 97 N., R. 59 W., northeast corner of sec. 1; iron post stamped	
"Ynktn 1281"-----	1, 280. 676
T. 98 N., R. 59 W., northeast corner of sec. 1; iron post stamped	
"Ynktn 1312"-----	1, 312. 268

T. 98 N., R. 60 W., northeast corner of sec. 1; iron post stamped	Feet.
"Ynktn 1351"-----	1, 350.894
T. 99 N., R. 60 W., northeast corner of sec. 1; iron post stamped	
"Ynktn 1316"-----	1, 316.079
T. 100 N., R. 60 W., northeast corner of sec. 12; iron post stamped	
"Ynktn 1301"-----	1, 300.545
T. 100 N., R. 61 W., northeast corner of sec. 12; iron post stamped	
"Ynktn 1371"-----	1, 371.154
T. 99 N., R. 61 W., northeast corner of sec. 1; iron post stamped	
"Ynktn 1393"-----	1, 392.731
T. 98 N., R. 61 W., northeast corner of sec. 1; iron post stamped	
"Ynktn 1433"-----	1, 433.208
T. 97 N., R. 61 W., northeast corner of sec. 1; iron post stamped	
"Ynktn 1528"-----	1, 528.134
T. 97 N., R. 60 W., northeast corner of sec. 1; iron post stamped	
"Ynktn 1396"-----	1, 395.365

From sec. 9, T. 97 N., R. 57 W., north to sec. 21, T. 99 N., R. 57 W., thence west, north, and west to sec. 3, T. 99 N., R. 59 W.

T. 98 N., R. 57 W., northeast corner of sec. 21; iron post stamped	
"Ynktn 1351"-----	1, 350.970
T. 98 N., R. 57 W., northeast corner of sec. 4; iron post stamped	
"Ynktn 1355"-----	1, 355.262
T. 99 N., R. 57 W., northeast corner of sec. 21; iron post stamped	
"Ynktn 1366"-----	1, 366.306
T. 99 N., R. 58 W., northeast corner of sec. 24; iron post stamped	
"Ynktn 1328"-----	1, 327.452
T. 99 N., R. 58 W., northeast corner of sec. 4; iron post stamped	
"Ynktn 1330"-----	1, 330.147
Milltown, at east end of James River Bridge; iron post stamped	
"Ynktn 1200"-----	1, 199.541

From line between secs. 1 and 12, T. 100 N., R. 57 W., west to line between secs. 1 and 12, R. 59 W., thence south to Tps. 99 and 100 N.

T. 100 N., R. 57 W., northeast corner of sec. 12; iron post stamped	
"Ynktn 1410"-----	1, 410.416
T. 100 N., R. 58 W., northeast corner of sec. 12; iron post stamped	
"Ynktn 1349"-----	1, 349.070
T. 100 N., R. 59 W., northeast corner of sec. 12; iron post stamped	
"Ynktn 1315"-----	1, 315.152

ELK POINT QUADRANGLE.

[Latitude 42° 30'-43°; longitude 96° 30'-97°.]

From Elk Point north to sec. 6, T. 94 N., R. 49 W., thence east to line between Rs. 48-49, thence south to line between Tps. 93 and 94, thence east to Chatsworth.

T. 91 N., R. 49 W., northwest corner of sec. 6; iron post stamped	
"Ynktn 1121"-----	1, 120.896
T. 92 N., R. 49 W., northwest corner of sec. 6; iron post stamped	
"Ynktn 1293"-----	1, 292.663
T. 93 N., R. 49 W., northwest corner of sec. 6; iron post stamped	
"Ynktn 1347"-----	1, 346.698

T. 94 N., R. 49 W., northwest corner of sec. 6; iron post stamped	Feet.
" Ynktn 1383 "-----	1, 381.981
T. 94 N., R. 48 W., near northwest corner of sec. 6; iron post stamped	
" Ynktn 1358 "-----	1, 357.145
T. 93 N., R. 48 W., near northwest corner of sec. 6; iron post stamped	
" Ynktn 1314 "-----	1, 313.565

From Burbank north to sec. 6, T. 94 N., R. 50 W., thence west to line between
Rs. 51 and 52 W., thence south to Vermillion.

T. 91 N., R. 50 W., northwest corner of sec. 6; iron post stamped	
" Ynktn 1137 "-----	1, 136.192
T. 92 N., R. 50 W., northwest corner of sec. 6; iron post stamped	
" Ynktn 1235 "-----	1, 234.738
T. 93 N., R. 50 W., northwest corner of sec. 6; iron post stamped	
" Ynktn 1274 "-----	1, 273.821
T. 94 N., R. 50 W., northwest corner of sec. 6; iron post stamped	
" Ynktn 1394 "-----	1, 393.060
T. 94 N., R. 51 W., northwest corner of sec. 6; iron post stamped	
" Ynktn 1228 "-----	1, 227.414
T. 93 N., R. 51 W., northwest corner of sec. 6; iron post stamped	
" Ynktn 1147 "-----	1, 146.776
T. 92 N., R. 51 W., northwest corner of sec. 6; iron post stamped	
" Ynktn 1183 "-----	1, 182.355

From Elk Point south to sec. 6, T. 90 N., R. 49 W., thence east to line between
Rs. 48 and 49 W., thence south to Jefferson.

T. 90 N., R. 49 W., northwest corner of sec. 6; iron post stamped	
" Ynktn 1128 "-----	1, 127.649
T. 90 N., R. 48 W., northwest corner of sec. 6; iron post stamped	
" Ynktn 1111 "-----	1, 110.405
Jefferson, northwest corner of school yard, at northwest side of walk, in stone set 4 feet underground and covered by a 3-inch pipe marked "U. S. B. M."; copper bolt (Missouri River Commission bench mark 358/3, redetermined by Coast and Geodetic Survey)---	1, 109.180

Deadwood, Edgemont, Harney Peak, Hermosa, Oelrichs, Rapid, and Sundance
quadrangles.

CUSTER, LAWRENCE, MEADE, AND PENNINGTON COUNTIES.

The elevations in the following list were originally based on a bronze tablet marked "4543," set in the city hall at Deadwood, and are stamped with the letters "DW." The elevations have been corrected to agree with the Coast and Geodetic Survey 1912 adjustment heights of bench marks near Edgemont.

The leveling was done between 1897 and 1900, by J. C. Barber, C. E. Worthington, and J. T. Stewart, with the exception of the line from Tilford to Deadwood and the leveling in the vicinity of Deadwood, which was done by L. F. Gottschalk.

DEADWOOD QUADRANGLE.

[Latitude 44°-44° 30'; longitude 103° 30'-104°.]

At Deadwood.

Deadwood, city hall, north entrance, in stone lintel on west side of door; bronze tablet stamped "DW 4543"-----	Feet. 4, 545. 672
Deadwood, city hall, under window, northwest corner of building, 2 feet east of corner stone; top of water table-----	4, 546. 92
Deadwood, Chicago & Northwestern Ry. station; top of rail-----	4, 533. 7
Deadwood, north side of Deadwood Avenue, east side of Deadwood Creek, south face of southeast corner of Smith building, occupied in part by post office; bronze tablet stamped "DW 4535"-----	4, 537. 41
Deadwood, Chicago, Burlington & Quincy R. R. station, in front of ticket office; top of west rail-----	4, 535. 5

From Deadwood along Chicago, Burlington & Quincy R. R. to Englewood.

Kirk, in front of Chicago, Burlington & Quincy R. R. station; top of rail-----	4, 991. 5
Kirk, 150 feet west of Chicago, Burlington & Quincy R. R. station, 45 feet southwest of railroad tracks, 15 feet north of wagon road, 30 feet southwest of telegraph pole, in north side of top of quartzite rock 3 by 2 feet; copper bolt stamped "DW 4990"-----	4, 992. 084
Kirk, 2.25 miles south of, near stone quarry, east side of railroad tracks, 25 feet south of north end of cut, top of small projection, in niche on face of rock wall, 3 feet above rails; deep rock cut-----	5, 325. 72
Englewood, 1.25 miles north of, 60 feet south of wagon-road crossing; cross on flat rock-----	5, 423. 91

From Englewood to Rochford.

Englewood, 0.5 mile north of, 100 feet south of crossing of two branches of the Chicago, Burlington & Quincy R. R., 30 feet east of Burlington & Missouri River division track, in large rock 15 by 15 by 10 feet; bronze tablet in center of top stamped "DW 5537"---	5, 539. 1
Englewood, in front of Chicago, Burlington & Quincy R. R. station; top of rail-----	5, 591. 2
Englewood, 0.5 mile south of, 35 feet east of track, 220 feet south of cattle guard, west side of center of ledge of light rock, just south of rock mound; cross on flat stone-----	5, 674. 95
Englewood, 1.5 miles south of, center of rock cut, 20 feet high on east side of track, 350 feet south of whistling post, 2.5 feet above tracks; cross on top of rock-----	5, 841. 63
Dumont, 0.8 mile north of, 60 feet west of wagon road crossing, 10 feet east of wagon-road running north and south; iron post stamped "DW 6178"-----	6, 181. 542
Dumont, opposite frog in switch, in front of section house; top of east rail-----	6, 151. 1
Bulldog ranch, 75 feet east of track, 50 feet northwest from wagon road, 15 feet southwest of post in mound of rock marked "U. S. L. M. 73," in top of small flat rock; bronze tablet stamped "DW 5863"-----	5, 865. 198

Nahant, 0.5 mile south of, 200 feet west of track, 30 feet southwest of wagon road, in northwest side of rock quarry, 14 feet above wagon road; copper bolt stamped "DW 5604"-----	Feet. 5, 606. 421
Rochford, 1.6 miles northwest of, 2,000 feet north of junction of North and South Rapid creeks, 240 feet north of bridge 92, rock cut on east side of track, 100 feet from south end of cut; cross on rock near ground-----	5, 383. 88
Rochford, 1.2 miles west of, junction of North and South Rapid creeks, 200 feet west of track, 10 feet north of wagon road, 40 feet southeast of stream, on north side of rock 7 by 7 by 6 feet, 2.5 feet above ground; small cross-----	5, 363. 58
Rochford, west end of town, 30 feet north of junction of road along north bank of Rapid Creek with road from Hill City, in rock outcrop on point about 22 feet above track, 2 feet south of rock mound; copper bolt stamped "DW 5299"-----	5, 301. 208
Rochford, 300 feet west of railroad station, 10 feet north of track, 15 feet northeast of northeast corner of planking in road crossing, 1 foot from small mound of rock; projection in face of rock cut 1 foot above ground-----	5, 229. 84

From Rochford to Redfern.

Rochford station, 3.5 miles southeast of, 100 feet northeast of bridge 79, 150 feet southeast of fork in wagon road, 25 feet northeast of road, in top of northwest one of two large slate rocks; copper bolt stamped "DW 4970"-----	4, 972. 238
Rochford station, 4.5 miles southeast of, 220 feet southeast of bridge 77, 8 feet southwest of track; projection in wall of rock cut 1.5 feet above tracks-----	4, 901. 22
Mystic, 3,500 feet northeast of, 300 feet south of signpost marked "Mystic," 40 feet west of track, 20 feet west of wagon road; wire nail in root of large spruce tree-----	4, 830. 94
Mystic, 1,500 feet west of sawmill near section house, 400 feet northeast of post office, 100 feet northwest of wagon road, 200 feet northwest of tracks, 7 feet above foot of rock outcrop on point, in east corner; copper bolt stamped "DW 4865"-----	4, 867. 525
Mystic, 4.5 miles southwest of, north end of divide between Castle and Slate creeks, 3,500 feet northwest of bridge 68 over Slate Creek, 350 feet south of garden patch, 15 feet east of wagon road, 30 feet west of track, 50 feet southwest of "P. T." post, 30 feet north of end of waste dump; iron post stamped "DW 5514"-----	5, 516. 264
Redfern, at section house; top of road crossing-----	5, 633. 2

From Sturgis to Whitewood.

Sturgis, about 0.5 mile northwest of Chicago & Northwestern Ry. station and 105 feet northeast of the first road crossing; iron post stamped "DW 3484"-----	3, 486. 668
Whitewood, 1 mile southeast of, 50 feet south of Sturgis and Whitewood wagon road, 70 feet southwest of road crossing, 0.25 mile east of northwest corner of sec. 27, T. 6 N., R. 4 E.; iron post stamped "DW 3590"-----	3, 592. 288

From Deadwood east along public road to Sturgis.

	Feet.
Deadwood, 2.25 miles east of, west of powder house and east of overhanging rock, just north of road crossing, on northeast side of 20-inch dead pine tree; spike in root-----	4, 491. 17
Deadwood, 4.25 miles east of, south side of road about 1 mile east of Deadwood fair grounds, and about 75 feet east of wagon bridge over Peedee Creek, on a flat bench; iron post stamped "DW 4454"-----	4, 455. 925
Deadwood, 5 miles east of, south side of road, opposite limestone ledge between two projecting ledges, southwest of projecting ledge with large anvil-shaped rock on top, on north side of 18-inch pine tree; spike-----	4, 286. 91
Sturgis, 5.8 miles west of, at point where road makes a sharp turn to the east toward Boulder Park, after leaving the main divide on the north side, in root on north side of 15-inch burr oak tree; spike-----	4, 147. 19
Sturgis, 3.8 miles west of, on south side of road, 460 feet east of the "Barroom" and 50 feet southwest of bridge across Bear Butte Creek; top of large limestone boulder; copper bolt stamped "DW 3814"-----	3, 816. 310
Sturgis, 1.25 miles west of, on south side of road and about 400 feet northeast of deserted log cabin on west side of mouth of canyon, at extreme north end of Bear Butte Canyon; top of north end of stone-----	3, 578. 14
Sturgis, at first road crossing west of station, northeast of signboard, north of Chicago & Northwestern Ry. track, in root on southwest side of scrub-oak tree; spike-----	3, 485. 55

From Deadwood via Centennial Park to Whitewood.

Deadwood, 4.5 miles north of, about 63 feet east of southeast corner of a large two-story dwelling known as the "Halfway House," just east of forks of road; iron post stamped "DW 4360"-----	4, 362. 125
Deadwood, 6.5 miles north of, 500 feet southeast of round stone water tank at Centennial Park, southeast of intersection of Deadwood-Spearfish road with old Spearfish-Whitewood road; iron post stamped "DW 4005"-----	4. 006. 823
Whitewood, 1 mile south of, 16 feet northeast of mile board, 18 feet east of Chicago & Northwestern Ry. track; iron post stamped "DW 3751"-----	3, 753. 631

From Sturgis along Spring Creek public road north about 5 miles.

Sturgis, 5 miles northwest of, 400 feet southwest of large red barn with two ventilators on top, about 2,050 feet north of southwest corner of sec. 17, T. 6 N., R. 5 E., on east side of Spring Creek road; iron post stamped "DW 3308"-----	3, 310. 241
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From Runkel along Chicago, Burlington & Quincy R. R. to Englewood.

Runkel, 450 feet east of station, 15 feet north of track, just southwest of sawmill, on top of 10 by 15 by 8 foot limestone boulder; copper bolt stamped "DW 4498"-----	4, 500. 513
Mowatts siding, 75 feet east of east switch, north of old log cabin, in limestone boulder 10 feet north of track; copper bolt stamped "DW 4720"-----	4, 722. 640

	Feet.
Elk Creek station, in front of; top of rail.....	4, 842. 8
Elk Creek station, 0.5 mile west of, 30 feet south of railroad, 60 feet south of point where Galena and Greenwood road crosses track; iron post stamped "DW 4882".....	4, 884. 174
Anthony station, at west end of; top of frog.....	4, 979. 8
Perry, 1.5 miles east of, 30 feet northeast of switch, at junction of Este branch Chicago, Burlington & Quincy R. R., on top of point of ledge; copper bolt stamped "DW 5269".....	5, 271. 503
Portuguese siding, at signpost; top of rail.....	5, 343. 45
Perry, southeast corner of platform, at road crossing; top of rail.....	5, 402. 4
Brownsville, 650 feet southeast of station, 20 feet west of track, 60 feet northwest of road crossing, 80 feet southwest of second switch block from station; iron post stamped "DW 5496".....	5, 498. 143
Brownsville, in front of station; top of rail.....	5, 504. 4
Woodville, 1.5 miles east of, 3.5 miles northwest of Brownsville, 20 feet east of Elk Creek-Kirk wagon road, 25 feet north of railroad; iron post stamped "DW 5743".....	5, 745. 104
Woodville, switch block in front of station; top of rail.....	5, 935. 9
Woodville, 80 feet southeast of switch at station, 35 feet south of main track, in top of a large quartzite boulder; copper bolt stamped "DW 5938".....	5, 940. 483
Englewood, 0.5 mile north of, opposite Burlington & Missouri River R. R. transfer station; top of rail.....	5, 548. 8

From Englewood along Spearfish branch of Chicago, Burlington & Quincy R. R. to Spearfish.

Englewood, 2 miles northwest of, 40 feet north of track and 40 feet west of Dumont-Lead City wagon road, about 75 feet northwest of bridge over railroad; iron post stamped "DW 5862".....	5, 864. 085
Terry, in front of station; top of north rail of main line.....	6, 166. 1
Terry, 225 feet north of station, 30 feet east of north end of a short switch, on ledge about 2 feet above the surface of ground; bronze tablet stamped "DW 6165".....	6, 167. 286
Portland, in front of station; top of rail.....	6, 431. 8
Portland, 600 feet northwest of station, at forks of wagon road 60 feet northeast of railroad (the only crossing between North and South Portland); iron post stamped "DW 6426".....	6, 428. 097
Crownhill, in front of station; top of rail.....	6, 155. 6
Crownhill, 60 feet south of station, 40 feet west of track; iron post stamped "DW 6153".....	6, 155. 074
Elmore, in front of water tank; top of rail.....	5, 218. 3
Elmore, 120 feet west of water tank, 80 feet south of section house, 40 feet south of track; iron post stamped "DW 5218".....	5, 220. 616
Spearfish, 14 miles south of, 500 feet northwest of switch block at Savoy, in center, of top of 12 by 12 by 20 foot limestone boulder, between Spearfish River and railroad, 40 feet northeast of railroad; bronze tablet "DW 4954".....	4, 956. 178
Maurice, opposite section house; top of rail.....	4, 465. 9
Spearfish, 8.8 miles south of, 40 feet west of railroad, 240 feet northeast of section house, 330 feet southwest of water tank, in top of limestone boulder between section house and water tank; copper bolt stamped "DW 4470".....	4, 471. 944

Spearfish, 3.5 miles south of, 460 feet south of Spearfish electric-light plant and 50 feet east of track, between track and Spearfish River;	Feet.
iron post stamped "DW 3892"-----	3, 893. 364
Spearfish, in front of station; top of rail-----	3, 638. 9
Spearfish, southwest corner of Star & Bullock stone building on corner of Sixth and I streets, in water table; bronze tablet stamped "DW 3647"-----	3, 649. 455

From Spearfish along public roads to Centennial Park.

Spearfish, 4.5 miles southeast of, 50 feet south of crossroads, 260 feet southwest of water tank, about 50 feet southeast of southeast corner of sec. 18, T. 6 N., R. 3 E.; iron post stamped "DW 3942"-----	3, 944. 196
Spearfish, 6 miles southeast of, 40 feet southeast of southeast corner stone of sec. 16, T. 6 N., R. 3 E., 20 feet south of wagon road; iron post stamped "DW 3815"-----	3, 817. 188

From Woodward ranch via Cold Springs to Bulldog ranch.

Woodward ranch, 1.25 miles south of, 1,000 feet southeast of Scott's unfinished cabin, 6 inches below top of limestone outcrop, 200 feet southwest of spring; witness tree 15 feet southeast, 10-inch pine; witness tree 125 feet west, 10-inch pine; copper bolt stamped "DW 6681"-----	6, 683. 438
Castle Creek, head of, in west side and 2 feet below top of limestone outcrop 10 by 10 feet, 150 feet northeast of intersection of Castle Creek, Cold Springs, and Newcastle roads; witness tree 150 feet north, 18-inch pine; witness tree 200 feet east, 18-inch pine; copper bolt stamped "DW 6536"-----	6, 538. 245
Cold Springs, 300 feet north of, in limestone ledge 15 feet higher than creek bed, 150 feet north of point where Cheyenne-Deadwood road crosses creek, 100 feet west of road, 200 feet west of road running south to head of Castle Creek; ledge shows out of ground 10 feet in length and 2 feet high; copper bolt stamped "DW 6417"-----	6, 419. 199
McQuaig road and Cheyenne-Deadwood road, 1 mile north of intersection of, east of road; nail in root of pine tree-----	6, 567. 9
McQuaig road and Cheyenne-Deadwood road, intersection of, 2 miles west of Colton ranch, in shelf of limestone cliff, 10 feet high and 15 feet long, on south bank dry creek channel, 100 feet south of the road intersection, 3 feet below top of cliff on the part farthest south and west; copper bolt stamped "DW 6464"-----	6, 466. 713
Colton ranch, 800 feet west of, 20 feet north of road; nail in side of big pine tree-----	6, 300. 85
Besant, 2 miles west of, on north edge of highway; nail in root of pine tree-----	6, 592. 16
Bulldog ranch, 2.25 miles west of, 300 feet south of dwelling at abandoned sawmill, 20 feet east of wire fence at road intersection; nail in root of spruce tree-----	6, 064. 89
Bulldog ranch, 0.7 mile west of; nail in root of balsam tree at edge of timber-----	5, 965. 72

From Bulldog ranch, on Chicago, Burlington & Quincy R. R., east to Nasby.

Bulldog ranch, 1 mile east of, in middle of road; nail in root of large pine tree-----	Feet. 6, 008. 82
Bulldog ranch, 3 miles east of, south edge of highway, 150 feet east of log house; nail in root of large pine tree-----	5, 818. 38
Dayton ranch, 0.4 mile east of, ridge south side of highway, 50 feet north of fence; nail in root of large pine tree-----	5, 730. 81
Rassumussen ranch, 0.25 mile east of, 20 feet from gate; nail in root of pine tree-----	5, 494. 15
Nasby, 200 feet north of dwelling, 50 feet northwest of road intersection; iron post stamped "DW 5456"-----	5, 458. 318

From Nasby southeast to Merritt.

Peterson ranch, 150 feet east of dwelling, on west side of road; iron post stamped "DW 5322"-----	5, 324. 302
Peterson ranch, 1 mile southeast of, 20 feet west of road, 800 feet south of top of ridge; nail in root of 15-inch pine tree-----	5, 395. 46
Merritt, 0.8 mile west of, stone at fence corner northwest of intersection of Silver City and Merritt roads; point 1 inch west of piece of white quartz in northwest end of stone-----	5, 136. 14
Merritt, at post office, 60 feet northeast of ranch on north side of road; iron post stamped "DW 5059"-----	5, 061. 340

From Chicago, Burlington & Quincy R. R. bridge 74, about 1.5 miles northeast of Mystic, to Silver City and Pactola.

Castle Creek, 150 feet west of junction with Rapid Creek, 35 feet north of small highway bridge over Rapid Creek, 40 feet east of cabin; wire nail in southeast side of 18-inch pine stump-----	4, 772. 72
Castle Creek, 4,500 feet southeast of mouth, 40 feet south of small highway bridge over Rapid Creek, 12 feet west of south end of high trestle bearing flume, 10 feet southeast of wagon road; point on west face of columnar rock 18 inches above ground-----	4, 727. 06
Silver City, 2.8 miles west of, 5 feet north of road up Rapid Creek, 30 feet west of junction with Merritt Road, southeast corner of high point of rock, on small shelf 2.5 feet above road; location marked by spruce tree 1 foot in diameter west 145 feet and three pine trees marked "U. S. G. S. B. M. W. T.," one 2.5 feet in diameter east 120" feet, one 15 inches in diameter northeast 100 feet, and one 1 foot in diameter north 65 feet; bronze tablet stamped "DW 4698"-----	4, 700. 228
Silver City, 1.6 miles west of, 40 feet southwest of highway bridge over Rapid Creek, at mouth of deep gulch coming in from the southwest, west side of 18-inch spruce tree; spike in root-----	4, 661. 18
Silver City, 1,200 feet east of post office, 110 feet southwest of highway bridge over Rapid Creek, 15 feet southwest of junction of road down Nugget Gulch with road down Rapid Creek; iron post stamped "DW 4592"-----	4, 594. 233
Silver City, 1.9 miles east of, at mouth of Jenny Gulch, 220 feet east of highway bridge over Rapid Creek, 40 feet northeast of highway bridge over ditch, 200 feet east of head gates; spike in north side of 15-inch pine tree-----	4, 548. 28
Pactola, 1.8 miles west of, 15 feet southwest of road to Silver City, 350 feet northwest of junction with road running up Bear Gulch, 220 feet north of house, near two pine trees marked "U. S. G. S. B. M. W. T.," one 20 inches in diameter southeast 35 feet, one 2.5 feet in diameter west 25 feet; iron post stamped "DW 4518"-----	4, 520. 171

From Pactola northwest to Merritt.

Pactola, 1.2 miles northwest of, 50 feet southwest of road to Merritt, 80 feet east of plank fence, at top of steep hill; spike in west root of 15-inch pine tree-----	Feet. 4, 743. 38
Traft ranch, 900 feet southeast of, 150 feet from top of divide between Rapid and Deer creeks, 20 feet southwest of road from Pactola to Merritt, on north side of 15-inch pine tree; spike in root-----	4, 887. 28
Pactola, 3 miles northwest of, 0.25 mile northwest of Hughes ranch, 35 feet southwest of road from Pactola to Merritt, 190 feet northwest of fork in road; two witness trees marked "U. S. G. S. B. M. W. T.," 6 inches in diameter northwest 200 feet; iron post stamped "DW 4934"-----	4, 936. 345
Ireland ranch, 500 feet northwest of, 25 feet southwest of road from Pactola to Merritt; northwest side of 2.5 foot pine tree; spike in root-----	5, 054. 97
Merritt post office (Jones ranch), 3,000 feet southeast of, in fork of road from Pactola to Merritt, 8 feet below and 140 feet northwest of top of divide between Jim and Deer creeks, southwest side of 13-inch pine tree; large wire spike in root-----	5, 197. 98

From Merritt east down Jim Creek.

Merritt, 0.8 mile northeast of, 4 feet south of road down Jim Creek, 350 feet east of fence, in west side of 20-inch pine tree; wire nail-----	4, 998. 25
Merritt, 2.5 miles northeast of, 25 feet south of wagon road down Jim Creek, 65 feet south of old cabin, 330 feet east of fence, north side of 2.5-foot pine tree; wire nail in root-----	4, 823. 85
Merritt, 3.25 miles east of, 500 feet south of old sawmill, 30 feet north of road down Jim Creek, tree used as southwest gatepost in wire fence; spike in root south side-----	4, 746. 45
Riley ranch (on Bogus Jim Creek), 0.25 mile northwest of, 8 feet southwest of timber road, in saddle on top of divide between Jim Creek and Bogus Jim Creek, in south side of 12-inch pine tree; spike-----	4, 776. 82

From Nemo via Greenwood to Nasby.

Nemo, 0.8 mile southeast of, 35 feet northeast of road down Boxelder Creek, 900 feet northeast of bridge over Boxelder Creek, on rocky point, in west root of 18-inch pine tree; spike-----	4, 654. 37
Nemo, 500 feet northwest of, 10 feet southwest of road to Greenwood, on top of slight ridge, northwest side of 24-inch pine tree; spike in root-----	4, 706. 92
Nemo, 3,500 feet northwest of, junction of road from Greenwood with road from Elk Creek, in root of 15-inch pine tree; spike-----	4, 740. 97
Greenwood, 2 miles southeast of, 10 feet northeast of road to Nemo, at junction of county road from Elk Creek to Nemo; near three pine trees marked "U. S. G. S. B. M. W. T.," one 20 inches in diameter southeast 105 feet, one 20 inches in diameter northwest 35 feet, one 18 inches in diameter southwest 70 feet; iron post stamped "DW 4786"-----	4, 787. 988
Greenwood, 1 mile southeast of, top of divide between Greenwood and Nemo, 8 feet north of county road; spike in east root of 18-inch pine-----	4, 997. 91

Greenwood, 100 feet southeast of large dwelling, at northwest corner of highway bridge over Boxelder Creek; spike in root on north side of 18-inch pine tree-----	Feet. 4, 925. 30
Greenwood, 1.1 miles northwest of, 30 feet west of road to Deadwood at point where timber road turns toward Nasby, across road from group of old log cabins, 250 feet northwest of highway bridge over Boxelder Creek, near two pine trees, one marked "U. S. G. S. B. M. W. T.," 15 inches in diameter southeast 18 feet, one 30 inches in diameter northeast 40 feet; iron post stamped "DW 5020"-----	5, 022. 013
Johnson ranch, 1.8 miles northeast of, 6 feet northwest of county road, 150 feet northeast of road crossing over Boxelder Creek, southwest side of 15-inch pine tree; spike in root-----	5, 101. 97
Anderson ranch, 1,000 feet southeast of, 10 feet southwest of road; iron post stamped "DW 5204"-----	5, 205. 958
Nelson ranch, 2,000 feet southwest of, 60 feet southeast of road, 180 feet southwest of forks in road running south across Boxelder Creek, in north root of 24-inch pine tree; spike-----	5, 300. 93

From Slate Creek schoolhouse via Castle Creek and Cold Springs to Bulldog ranch.

Slate Creek schoolhouse, 1.5 miles northwest of, 25 feet northeast of intersection of Hill City and Lookout roads, center of east side and 1 foot below top of highest slate outcrop; copper bolt stamped "DW 6146"-----	6, 148. 158
Kinney ranch, 500 feet east of, 125 feet south of bridge over Castle Creek, on Hill City road, west side of road east of Castle Creek; iron post stamped "DW 5737"-----	5, 739. 297
Reynolds ranch, 1 mile south of, intersection of Rochford, Hill City, and Castle Creek roads; iron post stamped "DW 6029"-----	6, 031. 342
Shick ranch, 0.5 mile east of, 275 feet west of intersection of Rochford and Castle Creek roads, 50 feet north of road, 6 feet from highest point of outcrop, in slate ledge 12 feet higher than road; copper bolt stamped "DW 6007"-----	6, 009. 281
Johnson ranch, 700 feet northwest of, 2.5 feet north of section corner on township line, 250 feet north of Castle Creek road, 60 feet west of road to Smith ranch; iron post stamped "DW 6363"-----	6, 365. 398
Castle Creek, head of, in west side and 2 feet below top of limestone outcrop 10 by 10 feet, 150 feet northeast of intersection of Castle Creek, Cold Springs, and Newcastle roads; copper bolt, stamped "DW 6536"-----	6, 538. 245
Thowell ranch, 0.5 mile west of, 25 feet southwest of fork of road to ranch; iron post stamped "DW 6769"-----	6, 771. 166
Cold Springs, 300 feet north of, 150 feet north of point where Cheyenne-Deadwood road crosses creek, 100 feet west of road, in limestone ledge, 15 feet higher than creek bed, which shows out of ground 10 feet in length and 2 feet high; copper bolt stamped "DW 6417"-----	6, 419. 199
Besant, 2.3 miles west of, north side of road, near edge of small park; iron post stamped "DW 6547"-----	6, 549. 351
Besant, 0.2 mile southeast of, south side of road; iron post stamped "DW 6433"-----	6, 435. 386
Fish timber camp, 100 feet south of, 50 feet west of stable, south edge of road; iron post stamped "DW 6284"-----	6, 286. 321

Bulldog ranch, 75 feet east of track, 50 feet northwest from wagon road, 15 feet southwest of post, in mound of rock, marked "U. S. L. M. 73," in top of small flat rock; bronze tablet stamped "DW 5863 "	Feet. 5, 865. 198
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From Spearfish along Spearfish and Bear Gulch road to Powers sawmill site.

Spearfish, water table of Star & Bullock Building; bronze tablet stamped "DW 3647 "	3, 649. 455
Brown ranch, 200 feet southwest of, south side of road; iron post stamped "DW 4224 "	4, 226. 158
Brown ranch, 4.1 miles southwest of, 2.3 feet north of corner common to secs. 1, 6, 31, and 36, Tps. 5 and 6 N., Rs. 1 and 2 E.; iron post stamped "DW 5131 "	5, 133. 124
Powers sawmill site, 400 feet north of, north side of road; iron post stamped "DW 5437 "	5, 439. 052

From Elmore via Cheyenne Crossing to Block ranch and return.

Elmore, west of section house; iron post stamped "DW 5218 "	5, 220. 616
Cheyenne Crossing, 20 feet northwest of, intersection of road to Elmore with old Deadwood-Cheyenne stage road; iron post stamped "DW 5308 "	5, 310. 130
Block ranch, 75 feet northeast of, mouth of Deadhorse Canyon, west side of road; iron post stamped "DW 5610 "	5, 612. 149
Block ranch, 1.8 miles northwest of, west side of town line, 1,000 feet south of corner common to secs. 24 and 25, R. 1 E., and secs. 19 and 30, R. 2 E.; iron post stamped "DW 6140 "	6, 142. 156

EDGEMONT QUADRANGLE.

[Latitude 43°-43° 30'; longitude 103° 30'-104°.]

From Ivanhoe via Minnekahta to Hot Springs.

Ivanhoe, 2,000 feet northeast of, 60 feet southeast of crossing of Pringle-Minnekahta road, 10 feet northeast of corner fence post; iron post stamped "DW 4443 "	4, 445. 394
Minnekahta, in front of station; top of rail	4, 163. 6
Minnekahta, 800 feet northeast of station, 100 feet northeast of switch stand at east end of Y, 50 feet north of track, 5 feet southeast of corner fence post; iron post stamped "DW 4159 "	4, 161.363
Minnekahta, 3.5 miles east of, 850 feet east of road crossing, 40 feet north of track, 16 feet east of north-south wire fence; iron post stamped "DW 4061 "	4, 063. 307
Erskine, road crossing at platform; top of rail	3, 817. 4
Erskine, 2,500 feet northeast of, 150 feet northwest of Minnekahta-Hot Springs road crossing, near bridge 5, 30 feet north of wagon road at nearest point, 2 feet south of rock mound, top of south corner of limestone ledge; copper bolt stamped "DW 3794 "	3, 796. 385

From Minnekahta along Chicago, Burlington & Quincy R. R. via Edgemont to E. & G. ranch.

Minnekahta, 800 feet northeast of station, 100 feet northeast of switch stand at east end of Y, 50 feet north of track, 5 feet southeast of fence corner post; iron post stamped "4159 DW "	4, 161.363
Arnold ranch, 300 feet northwest of, 50 feet west of railroad, east side of wagon road; iron post stamped "4058 DW "	4, 060. 134

Arnold ranch, 3 miles south of, 350 feet north and 300 feet east of railroad trestle 6, east bank of creek, 300 feet east of railroad; iron post stamped "8891 DW"-----	Feet. 3, 893. 214
Chilson, 0.4 mile west of section house, 75 feet south of wagon-road crossing; iron post stamped "3795 DW"-----	3, 797. 316
Edgemont, 2.9 miles northeast of, 150 feet south of Red Canyon, 75 feet east of wagon road, 50 feet west of railroad; iron post stamped "3460 DW"-----	3, 462. 251
Edgemont, north end of Chicago, Burlington & Quincy R. R. Hotel park, 50 feet west of main track; iron post stamped "3449 DW"-----	3, 451. 404
Edgemont, 4 miles northwest of, 450 feet southeast of railway pile bridge 206, 100 feet southwest of railway track, northeast side of wagon road; iron post stamped "3463 DW"-----	3, 465. 354
Marietta, 80 feet southwest of, near track at section house, 25 feet northeast of wagon road; iron post stamped "3486 DW"-----	3, 488. 297
Marietta, 2.7 miles northwest of, 300 feet southeast of trestle 213, 100 feet southwest of railroad track, 200 feet north of wagon road; iron post stamped "3544 DW"-----	3, 546. 453
Argentine, 175 feet south of water tank, 100 feet southwest of main track, 40 feet northeast of wagon road; iron post stamped "3632 DW"-----	3, 634. 366
Moss Agate Creek, west bank, 1.8 miles southwest of junction with Cheyenne River, 100 feet west of steep bank, 70 feet above creek and a quarter of a mile west of it; iron post stamped "3612 DW"-----	3, 614. 304
From Edgemont via Maitland post office and Cascade Springs to Hot Springs.	
Edgemont, 2.1 miles southeast of, at top of bluff, 25 feet south of road; iron post stamped "3671 DW"-----	3, 673. 281
Edgemont, 5.8 miles southeast of, 75 feet southeast of intersection of Edgemont, Ardmore, and Maitland post-office roads; iron post stamped "3578 DW"-----	3, 580. 312
Edgemont, 8.6 miles southeast of, 25 feet north of road, top of ridge; iron post stamped "3575 DW"-----	3, 577. 182
Edgemont, 10.6 miles southeast of, 0.2 mile east of Plum Creek, 0.3 mile south of Cheyenne River, top of small ridge 25 feet south of road; iron post stamped "3350 DW"-----	3, 352. 275
Maitland post office (Brady ranch), 200 feet southwest of, quarter corner on south side of sec. 24, T. 9 S., R. 4 E.; iron post stamped "3327 DW"-----	3, 328. 869
Maitland post office, 2 miles northeast of, top of highest ridge on Maitland and Cascade wagon road, 25 feet north of road; iron post stamped "3521 DW"-----	3, 523. 281
T. 8 S., R. 4 E., southeast corner of, quarter of a mile northwest of Coffey Flat schoolhouse; iron post stamped "3261 DW"-----	3, 263. 215
Cascade Springs, 300 feet west of sanitarium, in sandstone rock 3 feet higher than creek, between wagon road and creek; bronze tablet stamped "3406 DW"-----	3, 408. 213
Cascade Springs, 3.4 miles northeast of, west side of canyon, 200 feet east of deserted house, 25 feet north of road; iron post stamped "3335 DW"-----	3, 337. 164
Cascade Springs, 5.9 miles northeast of, 3.6 miles southwest of Hot Springs, 25 feet west of road on ridge; iron post stamped "3826 DW"-----	3, 828. 123

• Redetermined by Coast and Geodetic Survey precise leveling.

From Edgemont up Cottonwood Creek 6 miles, thence southeast to Provo, thence along Chicago, Burlington & Quincy R. R. to Ardmore.

Edgemont, 3 miles southwest of, 75 feet northwest of Cottonwood Creek, east side of railroad track; iron post stamped "3528 DW"	Feet. 3, 530. 277
Edgemont, 6 miles southwest of, 800 feet southeast of Cottonwood Creek, about 800 feet north of draw running northwest and emptying into it, and about 900 feet north of two high buttes; iron post stamped "3634 DW"	3, 636. 113
Edgemont, 9.2 miles southwest of, junction of roads running south and southwest, at top of divide; iron post stamped "3839 DW"	3, 841. 190
Edgemont, 12 miles southwest of, 2.5 miles west of Provo, 10 feet north of abandoned wagon road to Provo, 1 mile south of sheep corral; iron post stamped "3710 DW"	3, 712. 222
Provo, 500 feet southeast of, 35 feet northeast of wagon-road crossing; iron post stamped "3708 DW"	3, 710. 298
Provo, 3 miles east of, 50 feet north of Chicago, Burlington & Quincy R. R. track; iron post stamped "3632 DW"	3, 634. 159
Provo, 6 miles east of, 2 miles northwest of Rumford, 60 feet southwest of railway track; iron post stamped "3532 DW"	3, 534. 212
Rumford, 0.5 mile southeast of, 75 feet south of southeast end of siding, 65 feet southwest of main track, 300 feet east of wagon road; iron post stamped "3500 DW"	3, 502. 071
Rumford, 3 miles southeast of, 60 feet east of wagon road, 600 feet south of bridge over wagon road, 650 feet west of track; iron post stamped "3487 DW"	3, 489. 051
Rumford, 5.9 miles southeast of, 2 miles north of Ardmore, 25 feet east of wagon road, 500 feet west of railway track; iron post stamped "3527 DW"	3, 528. 977
Ardmore, 525 feet northwest of station, 80 feet north of road, 125 feet northwest of schoolhouse; iron post stamped "3553 DW"	3, 555. 013
From Ardmore up Indian Creek to Cole ranch, thence north and east to Rumford.	
Ardmore, 3.2 miles southwest of, 75 feet northwest of crossroads, 0.5 mile north of State line between South Dakota and Nebraska; iron post stamped "3666 DW"	3, 668. 039
T. 12 S., R. 3 E., quarter corner on west side of sec. 16, 2,100 feet north of State line; iron post stamped "3672 DW"	3, 674. 172
T. 12 S., R. 2 E., quarter corner on west side of sec. 13, 1,000 feet southwest of Slimler's ranch; iron post stamped "3679 DW"	3, 680. 875
T. 12 S., R. 2 E., southeast corner of sec. 8, about 0.7 mile west of Cole ranch, northeast of bank of Alkali Creek; iron post stamped "3756 DW"	3, 758. 310
Cole ranch, about 4 miles northwest of, 200 feet east of east prong of Alkali Creek, at west end of low ridge; iron post stamped "3899 DW"	3, 901. 057
T. 11 S., R. 1 E., southwest corner of sec. 18, at top of divide between north and south forks of Camp Creek; iron post stamped "4138 DW"	4, 140. 161
T. 11 S., R. 2 E., near southwest corner of sec. 14, 10 feet north of road; iron post stamped "3909 DW"	3, 911. 003
T. 11 S., R. 3 E., southwest corner of sec. 16, top of low ridge; iron post stamped "3720 DW"	3, 721. 791
T. 11 S., R. 3 E., 1,000 feet north and 300 feet east of quarter corner on south side of sec. 14, top of low ridge; iron post stamped "3673 DW"	3, 675. 408

From Rumford via Hat Creek to Maitland post office.

T. 10 S., R. 4 E., southwest corner of sec. 26, 1 mile southwest of Bar T ranch, 100 feet southeast of schoolhouse, 125 feet north of Hat Creek, in rock 8 by 12 inches and 6 inches above ground; aluminum tablet stamped "3443 DW"-----	Feet. 3,444.841
T. 10 S., R. 4 E., near middle of sec. 10, 200 feet south of Pine Creek, 400 feet west of Hat Creek, 100 feet south of schoolhouse, 20 feet west of wagon road, in sandstone 15 by 10 inches, 7 inches above ground; aluminum tablet stamped "3383 DW"-----	3,385.233

HARNEY PEAK QUADRANGLE.

[Latitude 43° 30'–44°; longitude 103° 30'–104°.]

From Redfern to Hill City.

Redfern, 2.6 miles southeast of, 75 feet east of crossing of Rochford and Hill City wagon road, 1,000 feet north of dwelling between bridges 61 and 62; spike in northeast side of pine tree-----	5,437.52
Hill City, 4.3 miles northwest of, 900 feet north of bridge 60, 3,000 feet east of county-road crossing, 300 feet north of spring meadow, 400 feet west of house, 30 feet north of wagon road from Redfern to Hill City, in east side of rock outcrop, 10 feet above road, 3 feet north of small rock mound; copper bolt stamped "DW 5349"-----	5,351.306
Hill City, 120 feet south of station, in center of south end of lawn, 2 feet north of fence; iron post stamped "DW 4976"-----	4,978.514
Hill City, south end of town, 3,600 feet south of station, 75 feet east of track, 500 feet north of switch on branch line to Coats and Cowboy, 75 feet south of abandoned sawmill, in top of white quartz rock, 2 by 2 feet at surface; bronze tablet stamped "DW 5026"-----	5,028.404

From Hill City to Custer.

Hill City, 4 miles south of, 1 mile southwest of switch at lumber spur, 470 feet northeast of crossing of Hill City-Custer wagon road, 235 feet southwest of southwest end of bridge 42, 100 feet north of limit post between railroad sections 10 and 9, about center of rock cut, 10 feet west of and 6 inches above track, top of rock projection from main wall of cut; copper bolt stamped "DW 5240"-----	5,242.337
Oreville, 25 feet northwest of track, 25 feet west of mail bag catcher stand, 60 feet north of switch stand at north end of siding, on top of flat bowlder east of small rock mound; chisel mark-----	5,339.11
Oreville, 2,500 feet south of sawmill, 200 feet southeast of junction of Spring and Tenderfoot creeks, 250 feet south of crossing of Hill City-Custer wagon road, 100 feet west of bridge 37, in north side of pine tree, near ground; copper nail-----	5,367.10
Custer, 6 miles northwest of, 1,000 feet north of tin mine, 500 feet northeast of Tenderfoot Springs, long rock cut in curve on east side of track, in white quartz rock, 2 by 2 foot face, on top of south end of cut; copper bolt stamped "DW 5696"-----	5,698.053
Custer, 5.5 miles northwest of, 250 feet north of crossing of Hill City-Custer wagon road, 50 feet east of road, in center of quartz outcrop, 1 foot south of loose rock mound, in top of 2 by 2 foot rock; bronze tablet stamped "DW 5749"-----	5,751.520
Custer, in front of ticket office, main track; top of rail-----	5,305.2

Custer, 950 feet southwest of station, 440 feet south of track, 500 feet east of axle-grease factory, north side of group of rocks, 5 feet east of large blazed pine tree, 1 foot north of rock mound, in top of rock, 5 by 5 foot surface, 5 feet high on lower side; bronze tablet stamped "DW 5322"	Feet. 5, 324. 465
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From Custer to Pringle.

Custer, 1.2 miles south of, 100 feet east of track on inside of curve, on opposite side of track from large jagged rock, at west end of rock ledge, on west side of pine tree; copper nail in root-----	5, 375. 63
Custer, 1.8 miles south of, 900 feet south of log house, north of yellowish-brown house, 20 feet west of white reference post marked "P. S. 10°," in cut on west side of track, on north end of large rock; chisel mark-----	5, 427. 39
Custer, 2.7 miles south of, 0.5 mile south of top of divide, 85 feet northeast of crossing of Custer-Pringle road over railroad, 800 feet north of log house, 25 feet east of wagon road, 2 feet southwest of rock mound, in rock 4 by 10 by 2 feet high; copper bolt stamped "DW 5469"-----	5, 471. 452
Mayo, 175 feet north of railroad section house, 75 feet northeast of road crossing, in rock 100 by 30 feet, 25 feet high, near southwest corner, 6 feet above ground; copper bolt stamped "DW 5190"-----	5, 192. 282
Pringle, 3,000 feet northeast of station, 300 feet south of crossing of Custer-Hot Springs road over railroad, 250 feet north of whistling post marked "Pringle," 30 feet west of track, in south side of rock 100 by 30 feet 20 feet high, 4 feet above ground; copper bolt stamped "DW 4879"-----	4, 881. 155
Pringle, in front of ticket office, main track; top of rail-----	4, 881. 2

From Pringle to Ivanhoe.

Pringle, 1 mile southwest of, 40 feet south of road crossing near top of divide, 3 feet northeast of telegraph pole; point on southwest corner of limestone rock-----	4, 952. 69
Loring siding, 6,000 feet north of north switch stand, 180 feet west of crossing of Pringle-Minnekahta road, 280 feet northwest of bridge 11, 15 feet northwest of pine tree, in limestone rock 20 by 15 feet, 5 feet high, in top 3 feet from northwest corner; copper bolt stamped "DW 4697"-----	4, 699. 325
Argyle, in front of section house; top of rail-----	4, 796. 0
Argyle, 1,550 feet southwest of section house, 30 feet east of track, near north end of small cut, 2 inches above ground, in southeast end of sandstone rock 8 by 3 feet; copper bolt stamped "DW 4798"	4, 800. 460

From Berne siding, 3.5 miles northwest of Custer, along public road to Bear Springs public road.

Pleasant View ranch, 0.5 mile southeast of, 0.5 mile northeast of Wright ranch, 800 feet south of small bridge on Custer-Deadwood road, 30 feet southeast of road from Wright ranch to Custer, 50 feet west of large pine tree blazed on west side, in large rock at north end of ledge 50 feet long, near center of top of rock, about 15 feet above road; chisel mark-----	5, 703. 68
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Wright ranch, 0.8 mile west of, 100 feet southeast of junction of two roads, 200 feet east of timber; spike in top of root on east side of detached 2-foot pine tree-----	Feet. 5, 768. 17
Wright ranch, 1.5 miles west of, 1,300 feet east of small butte covered with white quartz rock, 3,000 feet east of fork in road, rocky ridge running across road northwest and southeast 30 feet south of county road, in large outcrop 30 by 30 feet, 6 feet high, 7 feet west of northeast corner and 4 feet above ground, near three pine trees marked "U. S. G. S. B. M. W. T.," one southeast 18 feet, one northeast 35 feet, and one northwest 35 feet; bronze tablet stamped "DW 5871"-----	5, 873. 399
Wright ranch, 2 miles west of, 45 feet west of fork in road, 1,700 feet west of small quartz-covered butte on north side of road, on north side of 2-foot pine tree; spike in root-----	6, 000. 5
Wright ranch, 3 miles west of, 3,000 feet west of placer mine, 400 feet northwest of fork in road, 150 feet north of road to placer mine, 40 feet northeast of Custer-Bear Springs road; on north side of 18-inch pine tree; spike in root-----	6, 010. 48
Henderson ranch, 2,000 feet east of, 75 feet northwest of fork in county roads, 30 feet north of Custer-Bear Springs road, near three pine trees marked "U. S. G. S. B. M. W. T.," one 15 inches in diameter, southeast 133 feet, one 30 inches in diameter, north 23 feet, one 24 inches in diameter, northwest 49 feet; iron post stamped "DW 6060"-----	6, 062. 350
Peterson ranch, 1,400 feet northwest of, 50 feet west of right-angle bend in Custer-Bear Springs road; on northeast side of 2-foot pine tree; spike in root-----	6, 183. 89
Peterson ranch, 1 mile west of, at foot of steep hill, 8 feet south of county road; on north side of 1-foot pine tree; spike in root-----	6, 283. 60
Peterson ranch, 1.25 miles west of, in gap on top of divide between heads of French Creek and Hell Canyon, 10 feet north of Custer-Bear Springs wagon road, 5.25 feet northwest of southeast corner of sec. 33, T. 2 S., R. 3 E.; near two pine trees marked "U. S. G. S. B. M. W. T.," one 1 foot in diameter, west 11 feet, one 15 inches in diameter, east 30 feet; iron post stamped "DW 6443"-----	6, 445. 340
Bear Springs, 1.8 miles southeast of, 300 feet east of top of divide between Bear Springs and Bull Spring gulches, 5 feet north of Custer-Bear Springs road, on southeast side of 1-foot pine tree; spike in root-----	6, 630. 75
Bear Springs, 1.25 miles southeast of, 30 feet northeast of Custer-Bear Springs road, 0.5 mile northwest of crossing over top of divide between Bear Springs and Bull Spring gulches, on east side of small park, on west side of 15-inch pine tree; copper nail in root-----	6, 516. 24

From Bear Springs to Buck Spring public road.

Alkali Spring, 1 mile northwest of, 520 feet northwest of fork of roads to Buck Spring and down west side of Hell Canyon, 65 feet northeast of Buck Spring road, near top of limestone rock 24 by 4 feet and 2½ feet high, location marked by two pine trees marked "U. S. G. S. B. M. W. T.," one 10 inches in diameter, north 150 feet, one 18 inches in diameter, southeast 180 feet; bronze tablet stamped "DW 6224"-----	6, 226. 438
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Alkali Spring, 3.25 miles northwest of, 0.8 mile northwest of top of divide near southeast corner of park, 30 feet north of Custer-Buck Spring road; spike in root on northwest side of 30-inch pine tree-----	Feet. 6, 232. 39
Alkali Spring, 2.5 miles northwest of, 4,000 feet east of road crossing over west fork of Hell Canyon, 25 feet south of Custer-Buck Spring road, in scattered timber on top of ridge, near three pine trees marked "U. S. G. S. B. M. W. T.," one 10 inches in diameter, southeast 30 feet, one 10 inches in diameter, west 65 feet, one 10 inches in diameter, north 45 feet; iron post stamped "DW 6325"-----	6, 327. 710
West fork of Hell Canyon, 2,000 feet west of, 20 feet southwest of Custer-Buck Spring road, on north side of 15-inch tall dead pine tree; wire nail in root-----	6, 253. 55
Buck Spring, 5.25 miles northeast of, 2.3 miles northeast of point where Custer-Buck Spring road descends into bottom of Gillette Canyon, 25 feet west of road, near two pine trees marked "U. S. G. S. B. M. W. T.," one northwest 40 feet, one southeast 75 feet; iron post stamped "DW 6193"-----	6, 195. 451
Buck Spring, 4.2 miles northeast of, 1.6 miles northeast of point where Custer-Buck Spring road enters Gillette Canyon, 8 feet southeast of road, on west side of 15-inch pine tree; spike in root-----	6, 086. 72
Buck Spring, 4 miles northeast of, 30 feet north of Custer-Buck Spring road, on north side of clump of large trees, 1.1 miles northeast of point where road enters bottom of Gillette Canyon; on south side of 18-inch pine tree; spike in root-----	5, 963. 72
Gillette Canyon, top of slope, east side, 20 feet northwest of Custer-Buck Spring road at top of steep descent into bottom of canyon, on southeast side of 18-inch pine tree; spike in root-----	5, 829. 74
Buck Spring, 3 miles east of, 30 feet southwest of and about 10 feet above Custer-Buck Spring road, 250 feet east of point where road crosses dry stream bed in Gillette Canyon after descending steep hill, in top of limestone outcrop 2 by 2 feet and 2 feet high, location marked by three pine trees marked "U. S. G. S. B. M. W. T.," one 15 inches in diameter, east 250 feet, one 10 inches in diameter, northwest 12 feet, one 12 inches in diameter, south 45 feet; bronze tablet stamped "DW 5627"-----	5, 629. 538
Buck Spring, 2 miles east of, 30 feet north of Custer-Buck Spring road, 400 feet northwest of mouth of deep narrow gulch up which road runs, on bank 25 feet above road, on north side of 15-inch pine tree; spike in root-----	5, 609. 93
Buck Spring, 1.8 miles east of, 6 feet northwest of Custer-Buck Spring road, 200 feet east of top of divide between Gillette and Buck Spring canyons, on southwest side of 18-inch pine tree; spike in root-----	5, 800. 83
Buck Spring, 100 feet southeast of, 330 feet southwest of Kemp dwelling house, 45 feet west of road down Buck Spring Canyon, in top of north end of limestone rock 4 by 6 feet, 18 inches above ground, location marked by two pine trees marked "U. S. G. S. B. M. W. T.," one 14 inches in diameter, northwest 200 feet, one 15 inches in diameter, southeast 20 feet; bronze tablet stamped "DW 5432"-----	5, 434. 497

From Buck Spring to Hell Canyon and Pass Creek public road.

	Feet.
Buck Spring, 0.7 mile south of, 45 feet northwest of road down canyon, on east side of 8-foot pine tree; spike in root.....	5, 341. 48
Buck Spring, about 2 miles south of, 8 feet northwest of road down canyon, 6 feet southeast of dry rocky stream bed, in southeast side of 20-inch pine tree, 6 inches above ground; spike.....	5, 175. 88
Buck Spring, 3.2 miles south of, 150 feet east of dry stream bed in Buck Spring Canyon, 60 feet southeast of and about 10 feet above wagon road, near foot of a point topped with high vertical rock, where road again enters canyon after crossing ridge to northeast, in top of gray sandstone outcrop 3 feet wide and 2.5 feet high, location marked by three pine trees marked "U. S. G. S. B. M. W. T.," one 20 inches in diameter, southeast 6 feet, one 5 inches in diameter, southwest 50 feet, one 12 inches in diameter, north 27 feet; bronze tablet stamped "DW 5050".....	5, 052. 470
Buck Spring, 4.5 miles south of, 100 feet southeast of dry stream bed of Buck Spring Canyon, 500 feet south of old stone chimney near water hole 50 feet southeast of and 20 feet above road, in west side of 22-inch pine tree; spike.....	4, 897. 84
3-C-S, or Campbell ranch, 700 feet southwest of, 80 feet east of fork in roads, 1,000 feet east of junction of Gillette and Buck Spring canyons, on top of small rocky point; iron post stamped "DW 4727".....	4, 729. 567
Babcock ranch, 0.8 mile northwest of, 1.2 miles southeast of Coe ranch, 30 feet south of Custer-Newcastle road, 200 feet east of junction of road from Babcock ranch, 400 feet east of timbered ravine down which Custer-Newcastle road runs; iron post stamped "DW 4950".....	4, 952. 438
Barthold ranch, 0.25 mile east of, 500 feet northeast of Coon Creek, 60 feet north of intersection of two wagon roads; iron post stamped "DW 4670".....	4, 672. 541
Drew ranch, 2,200 feet northwest of, 15 feet southwest of road from Barthold ranch, 35 feet southeast of northwest corner of sec. 2, T. 5 S., R. 1 E., on southeast bank of gulch; iron post stamped "DW 4373".....	4, 375. 521
Drew ranch, 1.8 miles south of, 30 feet west of road to S. & G. ranch, 800 feet southwest of two buttes capped with limestone boulders, about 1 mile northeast of point where road crosses stream in Tepee Canyon, top of long hill; iron post stamped "DW 4422"....	4, 424. 476
Drew ranch, 2.8 miles south of, 75 feet east of road to S. & G. ranch, 180 feet northwest of stream in Tepee Canyon, 300 feet northeast of remains of old log cabin, small outcrop of sandstone rock, 20 feet above bed of stream, on top of rock 1 by 1 foot in center of outcrop, 2 feet southeast of mound; chisel mark.....	4, 202. 57
Hell Canyon and Pass Creek, 3.2 miles north of junction of, 15 feet west of road from Drew ranch to S. & G. ranch, 1,100 feet south of junction with road down west side of Tepee Canyon on top of ridge covered with scattered quartzite boulders, 6 feet east of boulder 12 by 8 by 5 feet, in top of rock 4 by 2 by 1 foot; bronze tablet stamped "DW 4294".....	4, 296. 286
Hell Canyon and Pass Creek, 1,200 feet west of junction, 75 feet southwest of junction of road down Pass Creek with road from Drew ranch to S. & G. ranch, 24 feet southeast of road, 90 feet south of south bank of creek bed; iron post stamped "DW 3846"....	8, 848. 634

Sullivan ranch, 1 mile east of, on south bank of Pass Creek, 250 feet east of mouth of small running stream, 40 feet southeast of road, on north side of 15-inch cottonwood tree; spike in root-----	Feet. 3, 900. 60
Sullivan ranch, 2.6 miles east of, 240 feet south of stream bed in Pass Creek Valley, 45 feet south of county-road crossing over stream bed, 800 feet west of point where road runs up out of valley onto a flat prairie, on small point of land 10 feet above road; iron post stamped "DW 3988"-----	3, 990. 522
Sullivan ranch, 5.8 miles east of, 3,800 feet northeast of southwest corner of sec. 35, T. 5 S., R. 2 E., 25 feet north of county road from S. & G. ranch to Custer, 65 feet west of junction with dim road from northwest, about halfway up a long hill; iron post stamped "DW 4253"-----	4, 255. 597

From Pass Creek to Loring siding public road.

Richardson ranch, 1.8 miles southwest of, 800 feet east of southeast fork of Pass Creek, 5 feet south of county road from S. & G. ranch to Custer, on northwest side of 2-foot pine tree; spike in root----	4, 428. 76
Richardson ranch, 1 mile southwest of, 15 feet northwest of road from S. & G. ranch to Pringle, at junction of road from southwest, in saddle on top of ridge; iron post stamped "DW 4594"-----	4, 596. 608
Richardson ranch, 500 feet southwest of dwelling, 65 feet southwest of county road, on north side of 20-inch pine tree; spike in root----	4, 584. 247
Richardson ranch, 2 miles east of, 20 feet east of road, 800 feet north of junction of roads, 900 feet south of junction with private road from Richardson ranch, on top of ridge about 1.25 miles west of Pleasant Valley; iron post stamped "DW 4796"-----	4, 798. 690
Eighteen Mile ranch, 0.8 mile west of, 1,200 feet north of Tutt ranch, 15 feet southwest of county road, 100 feet west of junction of road from Eighteen Mile ranch with road up Pleasant Valley, west side of Pleasant Valley, 3 feet northeast of wire fence; iron post stamped "DW 4649"-----	4, 651. 683
Eighteen Mile ranch, 1,800 feet northeast of, 180 feet southwest of fork in stream bed, 90 feet northwest of water hole, on northwest end of brown sandstone 5 by 3 feet and 1 foot high; circle and radial lines, chisel mark-----	4, 693. 17
Eighteen Mile ranch, about 2 miles southeast of, 6 feet west of road from Eighteen Mile ranch to Horgan ranch, 1,500 feet north of top of divide, on east side of 2½-foot pine tree; spike in root-----	4, 852. 33
Horgan ranch, 2 miles northwest of, 15 feet west of road from Loring siding to Eighteen Mile ranch, 350 feet south of top of divide over which road crosses; iron post stamped "DW 4916"-----	4, 918. 846
Horgan ranch, 0.8 mile southwest of, 27 feet southeast of road coming into ranch from southwest, 400 feet southwest of junction with road from Eighteen Mile ranch, near north end of circular outcrop of flat rock, on top of southeast side of sandstone rock 5 by 3 by 1 foot; chisel mark-----	4, 793. 65

From point 2 miles east of Richardson's ranch southwest by McBeath ranch down East Fork of Hawkwright Creek, thence north to Pass Creek Valley.

McBeath ranch, 1.4 miles northeast of, 20 feet east of road to Custer, on south side of ridge of timber through which road passes, 6 feet east of dry, sandy ravine, on northwest side of 15-inch pine tree; copper nail in root-----	4, 640. 59
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McBeath ranch, 1,600 feet northeast of, 35 feet southeast of road to Custer on southwest edge of timber, 300 feet southwest of point where road runs down dry, rocky stream bed, near pine tree, marked "U. S. G. S. B. M. W. T.," east 30 feet; iron post stamped "DW 4512"-----	Feet. 4, 514. 641
Cedar ranch, 1,300 feet northwest of, 370 feet south of gate in wire fence, 60 feet east of road, on west side of 15-inch dry pine stump 6 feet high; copper nail in root-----	4, 401. 39
Cedar ranch, 500 feet west of, 140 feet west of gate in wire fence, 20 feet southwest of road, on northeast side of 12-inch pine tree; spike level with ground in root-----	4, 350. 35
Cedar ranch, 2 miles south of, 20 feet west of road down Hawkwright Creek, 180 feet west of and about 30 feet above bed of east fork of creek, 600 feet north of point where road runs up out of valley and crosses ridge, near two pine trees marked "U. S. G. S. B. M. W. T.," one 5 inches in diameter, south 70 feet, one 8 inches in diameter, west 40 feet; iron post stamped "DW 4165"-----	4, 167. 590
Cedar ranch, 4 miles south of, 40 feet west of crossing of road over Hawkwright Creek, 500 feet south of spring, on south side of 15-inch cottonwood tree; spike in root-----	4, 035. 91
Cedar ranch, 4.8 miles south of, 25 feet northeast of road down Hawkwright Creek, at junction with road from northwest, about 3,000 feet south of fork in creek, 0.5 mile west of creek; iron post stamped "DW 4021"-----	4, 023. 625
McBeath ranch, 2.5 miles, west of, 70 feet northwest of road from McBeath and Cedar ranches to Pass Creek, at junction with road up ridge from southwest, on top of watershed between Pass Creek and Hawkwright Creek, where road starts descent into Pass Creek basin, pine tree 15 inches in diameter marked "U. S. G. S. B. M. W. T.," southeast 130 feet; iron post stamped "DW 4373"-----	4, 375. 590

From Pass Creek Valley north to Marsh ranch.

Roger's shack, 1.25 miles northeast of, 120 feet southeast of old S. & G.-Custer County road, 25 feet northeast of plank gate in wire fence on south side of Lindsay ranch pasture, on north side of 2-foot pine tree; spike in root-----	4, 641. 63
Lindsay ranch, 0.8 mile east of, 18 feet southeast of old S. & G.-Custer County road, in small saddle on top of ridge, 40 feet northeast of crest, 600 feet south of fence on north side of pasture, near two pine trees marked "U. S. G. S. B. M. W. T.," one 5 inches in diameter, northwest 60 feet, one 12 inches in diameter, northeast 90 feet; iron post stamped "DW 4801"-----	4, 803. 341
Lindsay ranch pasture, 4,000 feet north of northeast corner, 40 feet west of old S. & G.-Custer County road, 450 feet north of junction with road from southwest, south side of belt of timber; in southeast side of 12-inch pine tree; wire spike-----	4, 859. 41
Reynolds ranch, about 1 mile southwest of, 120 feet southeast of old S. & G.-Custer County road, on southeast side of 18-inch pine tree; wire spike in root-----	5, 155. 41
Reynolds ranch, 0.5 mile southwest of, 30 feet east of old S. & G.-Custer County road, at junction of road from southeast, 0.25 mile south of point of fork of road to Reynolds ranch; iron post stamped "DW 5208"-----	5, 210. 492

Reynolds ranch, 1.2 miles north of, 35 feet southeast of old S. & G.-Custer County road, 165 feet northeast of cross roads in draw forming head of Pass Creek, in northwest side of 12-inch pine tree; copper nail-----	Feet. 5, 307. 28
Reynolds ranch, 2 miles north of, 150 feet southeast of road to Y 4 ranch, 0.5 mile southwest of timbered butte, in northwest side of 2-foot pine tree; copper nail-----	5, 434. 71
Reynolds ranch, 2.8 miles north of, 20 feet east of road to Y 4 ranch, 0.5 mile northwest of timbered butte, near south end of strip of prairie, location marked by two pine trees marked "U. S. G. S. B. M. W. T.," one 6 inches in diameter, south 180 feet, one 12 inches in diameter, northeast 280 feet; iron post stamped "DW 5491"-----	5, 493. 464
Reynolds ranch, 3.8 miles north of, 50 feet east of road to Y 4 ranch, 160 feet southwest of gate in fence, on north side of 18-inch pine tree; wire spike in root-----	5, 490. 37
Y 4 ranch, 0.5 mile southwest of, 30 feet north of road from Pass Creek, 25 feet east of ravine, 60 feet north of fence, on south side of 2-foot pine tree; wire spike in root-----	5, 518. 16
Y 4 ranch, 0.5 mile northeast of, 20 feet southeast of road to Custer, in saddle on top of small ridge, near two pine trees marked "U. S. G. S. B. M. W. T.," one 5 inches in diameter, west 145 feet, one 12 inches in diameter, northeast 200 feet; iron post stamped "DW 5541"-----	5, 543. 389
Y 4 ranch, 2.5 miles northeast of, 10 feet southeast of road to Custer, 2,500 feet southwest of junction with old Custer-Newcastle stage road, on north side of 18-inch pine tree; wire spike in root-----	5, 673. 85
From Carr ranch along Custer-Newcastle public road via Fourmile, Marsh ranch, and Ward ranch, across Hell Canyon to point about 6.6 mile north of Babcock ranch.	
Carr ranch, 300 feet northeast of, 3 miles southwest of Custer, in spherical rock outcrop 100 feet southeast of road; witness trees, one 45 feet east, 30-inch pine, one 30 feet south, 15-inch pine; bronze tablet stamped "DW 5475"-----	5, 477. 489
Fourmile, Hendricks ranch, 500 feet east of, 3 feet west of mile board at intersection of Dudley road with Custer-Newcastle road, 4.5 miles southwest of Custer; iron post stamped "DW 5336"-----	5, 338. 861
Fourmile, 2 miles west of, 0.5 mile east of Marsh ranch, 40 feet south of road; nail in root of 18-inch pine-----	5, 475. 97
Marsh ranch, 800 feet west of, top of large flat rock on east edge of road, level with road, in west bank of dry creek channel, 125 feet north of crossing; 30-inch pine witness tree, 70 feet east of south; 30-inch pine witness tree, 50 feet east of south; bronze table stamped "DW 5453"-----	5, 455. 468
Ward ranch, 300 feet south of, 50 feet north of road, 18-inch pine witness tree 30 feet east; bronze tablet set in rock, stamped "DW 5614"-----	5, 616. 295
Ward ranch, 1 mile west of, on south edge of road, in root of 15-inch pine tree; nail-----	5, 598. 68
Ward ranch, 2 miles west of, 1 mile north of Smith ranch, at junction of ravine with Hell Canyon on south edge of road, 75 feet east of road down Hell Canyon; 10-inch pine witness tree 50 feet southeast, 20-inch pine witness tree 165 feet northeast; bronze tablet stamped "DW 5090"-----	5, 092. 396

Smith ranch, 3 miles west of, 800 feet west of intersection of middle and south roads over Hell Canyon, on top of divide between west Hell Canyon and east prong of Tepee Canyon, in limestone 3 by 2 feet and 1½ feet high, 100 feet northwest of road; 15-inch pine witness tree 200 feet north, 12-inch pine witness tree 65 feet southwest; bronze tablet stamped "DW 5358"-----	Feet. 5, 360. 329
Smith ranch, 5 miles west of, 25 feet north of road, 100 feet west of middle prong of Tepee Canyon, in root of 12-inch pine tree; nail-----	5, 100. 84
Smith ranch, 6 miles west of, 25 feet south of road, 900 feet east of section corner, on line between ranges 1 and 2, near foot of ridge; 20-inch pine witness tree 285 feet east, 24-inch pine witness tree 250 feet northeast; iron post stamped "DW 5094"-----	5, 096. 342
Smith ranch, 8 miles west of, on north edge of road, 300 feet west of top of ridge, 0.25 mile west of road running to Babcock ranch; point on large flat rock-----	5, 045. 52
From point on Custer-Deadwood public road 0.5 mile southeast of Pleasant View ranch, half a mile northeast of Wright ranch, and 30 feet southeast of road from Wright ranch to Custer northwest to James Dwyer's ranch.	
Mahnke ranch, 0.5 mile south of, 35 feet west of intersection of old stage road from Custer to Deadwood and road running to Hill City via Tenderfoot, 0.5 mile southeast of Junction schoolhouse; 15-inch pine witness tree 120 feet northeast, 18-inch pine witness tree 120 feet northwest; iron post stamped "DW 6106"-----	6, 108. 290
Mahnke ranch, 1.5 miles north of, 10 feet east of road; nail in root of 12-inch pine tree-----	6, 032. 91
Vonderlehr ranch, 275 feet north of, east side of road where it turns northwest on north side of valley; 24-inch pine witness tree 120 feet northwest, 24-inch pine witness tree 300 feet northeast; iron post stamped "DW 5818"-----	5, 820. 281
Vonderlehr ranch, 2 miles north of, 20 feet east of road, 300 feet north of top of ridge at Spring Creek, in root of 24-inch pine tree; nail-----	5, 944. 35
Jackson ranch, 800 feet west of, at west edge of road; 100 feet west of small creek; 30-inch pine witness tree 170 feet northeast, 36-inch pine witness tree 265 feet northwest; iron post stamped "DW 5833"-----	5, 835. 268
Jackson ranch, 1.25 miles north of, 50 feet west of road; nail in root of 10-inch pine tree-----	5, 950. 35
Simpson ranch, 400 feet northeast of, in rock outcrop on point of ridge on east side of road; 18-inch pine witness tree 85 feet west, 15-inch pine witness tree 35 feet north; bronze tablet stamped "DW 6123"-----	6, 125. 171
Gillette ranch, 350 feet east of, in rock outcrop 20 feet long and 4 feet high, 15 feet above and 25 feet northeast of road at angle of road, 175 feet northwest of bridge over Slate Creek, 24-inch pine witness tree 370 feet south; bronze tablet stamped "DW 6243"-----	6, 245. 353
Gillette ranch, 1.1 miles north of, triangular stone 18 inches high with 2-foot base, 40 feet west of road, 75 feet east of Slate Creek; top surface-----	6, 107. 79
Cramer ranch, 0.4 mile north of, 20 feet south of road forks; 36-inch pine witness tree 325 feet northeast, 30-inch pine witness tree 425 feet southwest; iron post stamped "DW 5901"-----	5, 903. 173

From Dwyer ranch east to Tigerville, on Chicago, Burlington & Quincy R. R.

Jim Dwyer ranch, 800 feet northwest of, 275 feet north of road; iron post set for township corner on base line, marked "Sec. 1 N., R. 3 E.," on northwest side and "R 4 E." on northeast side, stamped "DW 5837"-----	Feet. 5, 839. 698
Jim Dwyer ranch, 1 mile east of, south of road, in root of 10-inch pine tree; nail-----	5, 864. 15
Mrs. Dwyer ranch (Tigerville), 100 feet east of road intersection, in root of 24-inch pine tree; nail-----	5, 487. 32

From point 1.25 miles southeast of Bear Springs on Custer road to Bear Springs, Preacher Spring, and head of Castle Creek, thence north to Deadwood-Newcastle road, thence east to Bulldog ranch on Chicago, Burlington & Quincy R. R.

Bear Springs, in flat limestone outcrop 12 by 15 feet and 130 feet east of creek, 500 feet southeast of cabin, 50 feet below timber line, 350 feet southeast of road, 600 feet northeast of road; 18-inch pine witness tree 400 feet northwest, 40-inch pine witness tree 250 feet northeast; copper bolt stamped "DW 6490"-----	6, 492. 444
Bear Springs, 2.25 miles north of, in center and upper side of flat limestone outcrop, 135 feet northeast of road, on top of divide between head of Gillette Canyon and Hell Canyon, outcrop 60 feet by 30 feet; 15-inch pine witness tree 175 feet south, 12-inch pine witness tree 310 feet northwest; copper bolt stamped "DW 6912"-----	6, 914. 5
Bear Springs, 3.8 miles northwest of, 75 feet north of road, in root of 15-inch pine tree; nail-----	6, 666. 88
Bear Springs, 4 miles northwest of, 25 feet east of road from Gillette Canyon to Bear Springs, on southeast side of Gillette Park, at foot of ridge dividing branch of Gillette Canyon toward Bear Springs from branch to head of Spring Creek, 800 feet south of intersection of the two branches of Gillette Canyon, near intersection of roads running to Bear Springs, Spring Creek, down Gillette Canyon, and north through Gillette Park; witness tree 190 feet northeast, 20-inch pine tree, witness tree 400 feet southeast, 30-inch pine tree; iron post stamped "DW 6811"-----	6, 613. 430
Preacher Spring main road and Gillette Canyon road, 5.1 miles east of intersection on Preacher Spring road, 30 feet south of road; highest point of rock 12 by 12 inches-----	6, 562. 76
Preacher Spring main road and Gillette Canyon road, 3 miles east of intersection, 150 feet north of road, in root of 24-inch pine tree; nail-----	6, 464. 22
Preacher Spring main road and Gillette Canyon road, 3 miles east of intersection, at intersection of a ravine from the south with Gillette Canyon, in second limestone outcrop from the north, at foot of cliff and 40 feet south of northwest point of cliff, 5 feet above level of surface in outcrop 10 feet high; 30-inch pine witness tree 280 feet north, 24-inch pine witness tree 300 feet southwest; copper bolt stamped "DW 6374"-----	6, 376. 251
Preacher Spring main road and Gillette Canyon road, 1 mile east of intersection, 50 feet east of road; nail in root of 18-inch pine tree-----	6, 210. 06
Preacher Spring main road and Gillette Canyon road, 0.3 mile west of intersection, in east end and 8 inches below top of limestone outcrop 5 feet long and 2 feet high, 75 feet north of road and 6 feet higher than road; 18-inch pine witness tree 25 feet north, 24-inch pine witness tree 125 feet northeast; copper bolt stamped "DW 6129"-----	6, 131. 441

Graham ranch road, 1 mile northeast of intersection with, 20 feet east of road, in root of 24-inch dead pine tree; nail-----	Feet. 5,965.99
Graham ranch road, 25 feet west of intersection of, 4 miles east of Graham ranch; 30-inch pine witness tree 45 feet north, 30-inch pine witness tree 125 feet northeast; iron post stamped "DW 6167"-----	6,169.423
Graham ranch, 3 miles east of, 20 feet west of road, in root of 18-inch pine tree; nail-----	6,223.40
Graham ranch, 1 mile east of, on south side of road, in root of 15-inch pine tree; nail-----	6,093.89
Graham ranch, 1,000 feet south of, in blue limestone outcrop 12 by 12 inches, 15 feet east of road on east side of Hay Canyon, 20 feet east of foot of hill; 24-inch pine witness tree 135 feet north, 30-inch pine witness tree 280 feet southeast; copper bolt stamped "DW 5752"-----	5,754.494
Moon ranch, 1.25 miles south of, 45 feet east of road, in root of 18-inch dead pine tree; nail-----	6,148.47
Moon ranch, 65 feet south of cabin, in limestone outcrop 18 by 24 inches; 10-inch pine witness tree 170 feet north, 24-inch pine witness tree 85 feet west; copper bolt stamped "DW 6273"-----	6,275.732
D. W. Thompson ranch, 2.5 miles south of, 75 feet east of road, in root of 40-inch pine tree; nail-----	6,405.57
D. W. Thompson ranch, 1.25 miles south of, 50 feet west of road, in root of 30-inch pine tree; nail-----	6,388.29
D. W. Thompson ranch 0.7 mile south of, 25 feet east of intersection of Newcastle road with road south; 12-inch pine witness tree 50 feet east, 18-inch pine witness tree 265 feet southwest; iron post stamped "DW 6480"-----	6,482.410
- D. W. Thompson ranch, 0.25 mile south of, 90 feet east of road; in root of 16-inch pine tree; nail-----	6,513.47
D. W. Thompson ranch, 1.25 miles east of, in limestone outcrop 24 by 18 feet, 6 feet higher than road, 40 feet southeast of intersection of Preacher Spring road with Newcastle road; 36-inch pine witness tree 250 feet west, 18-inch pine witness tree 185 feet southeast; copper bolt stamped "DW 6588"-----	6,590.385
Woodward ranch, 2.25 miles south of, 40 feet east of road, beside stake; stone 2 feet by 1 foot; highest point-----	6,570.93

From intersection of Preacher Spring, Ditch Creek, Spring Creek, and Bear Springs roads north to head of Ditch Creek.

Bear Springs, 5 miles northwest of, 2.8 miles southeast of head of water in Ditch Creek, 12 feet east of road, 100 feet southeast of limestone outcrop, 300 feet north of top of ridge; highest point of 18-inch black boulder with broken corner-----	6,600.26
Bear Springs, 5.5 miles northwest of, 2.25 miles southeast of head of water in Ditch Creek, 2 feet northeast of corner of SE. $\frac{1}{4}$ and SW. $\frac{1}{4}$ sec. 36, T. 1 S., R. 2 E., and NE. $\frac{1}{4}$ and NW. $\frac{1}{4}$ of sec. 1, T. 2 S., R. 2 E., 100 feet west of road, 25 feet east of dry creek; 24-inch pine witness tree 425 feet southwest; iron post stamped "DW 6571"-----	6,573.457
Ditch Creek, head of, in limestone outcrop 10 by 10 feet and 2 feet high, 85 feet east of road and 15 feet higher than road, 400 feet south of spring at head of Ditch Creek; 24-inch pine witness tree 180 feet northeast, 15-inch pine witness tree 280 feet west; bronze tablet stamped "DW 6410"-----	6,412.406

From Sheridan via Hill City to McAdam ranch.

Sheridan, 3.2 miles southwest of, 100 feet south of J. R. stamp mill, 75 feet northwest of Lambert house, 60 feet west of intersection of road; iron post stamped "DW 4736"-----	Feet. 4, 738. 263
Hill City, 120 feet south of railroad station, in center of south end of lawn, 2 feet north of fence; iron post stamped "DW 4976"-----	4, 978. 514
McAdam ranch, 100 feet northwest of, south edge of road; iron post stamped "DW 4947"-----	4, 949. 159

From Richardson ranch via Lame Johnny Creek to Tinsley ranch.

Richardson ranch, 600 feet northeast of, 3.5 miles from Custer; iron post stamped "DW 5187"-----	5, 189. 314
Wood ranch, 0.8 mile southeast of, 400 feet south of abandoned saw- mill, 100 feet west of road, 25 feet south of rock ledge 5 by 15 feet 2 feet high, in solid rock; bronze tablet stamped "DW 5027"-----	5, 029. 391
Tinsley ranch, 800 feet east of, in granite rock, 10 feet in diameter, 4 feet high, on south side of road, 300 feet west of top of divide; bronze tablet stamped "DW 5109"-----	5, 111. 336

From Clinkenbeard ranch to Pringle.

Clinkenbeard ranch, 300 feet southwest of, at intersection of Pringle, Hot Springs, and Buffalo Gap roads; iron post stamped "DW 4532"-----	4, 534. 309
Bowman ranch, fork of road to, north side of road; iron post stamped "DW 4716"-----	4, 718. 383
Pringle, 0.4 mile north of; copper bolt stamped "DW 4879"-----	4, 861. 155

Near Dwyer ranch.

Jim Dwyer ranch, 800 feet northwest of, 275 feet north of road; iron post set in township corner on base line, marked "Sec. 5, T. 1 N., R. 3 E.," on northwest and "R. 4 E." on northeast, stamped "DW 5637"-----	5, 839. 698
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HERMOSA QUADRANGLE.

[Latitude 43° 30'-44°; longitude 103°-103° 30'.]

Near Sheridan.

Sheridan, 0.2 mile south of, 200 feet northwest of Barthold ranch, west of intersection of Sheridan, Hill City, and Keystone roads; iron post stamped "DW 4601"-----	4, 603. 271
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From Beardsley ranch via Keystone and Glendale to Hayward.

Beardsley ranch, 0.5 mile northeast of, 25 feet north of bridge over Battle Creek, east side of road, in granite rock; bronze tablet stamped "DW 4734"-----	4, 736. 148
Keystone, 225 feet west of south end of business street, 150 feet southwest of Nick Shoemaker house, north side of road, in bench of rock 2 by 5 feet, 3 feet higher than road; aluminum tablet stamped "DW 4340"-----	4, 342. 024
Harney schoolhouse, 300 feet east of, in large rock 50 feet southeast of intersection of Keystone, Rockerville, and Glendale roads; bronze tablet stamped "DW 4198"-----	4, 200. 156

Glendale, 0.4 mile south of, 100 feet east of intersection of Glendale, Spokane, and Hayward roads, in rock 8 by 10 feet and 3 feet high; bronze tablet stamped "DW 4244"-----	Feet. 4, 246. 139
Hayward, west side of town, 175 feet east of Battle Creek, 50 feet south of intersection of Glendale, Rockerville, and Hermosa roads, in rock 15 by 8 feet and 3 feet high; bronze tablet stamped "DW 3812"-----	3, 814. 217

From Hayward north to Rockerville.

Hayward, 3.5 miles north of, on ridge west of road; iron post stamped "DW 4507"-----	4, 509. 058
Rockerville, west end of town, southeast side of intersection of Hill City, Keystone, and Rockerville roads; iron post stamped "DW 4369"-----	4, 371. 015

Near Baker ranch.

Sheridan, 2 miles northeast of, 50 feet northeast of intersection of Sheridan, Pactola, and Rapid roads, in stone 3 by 3 feet and 18 inches above ground; bronze tablet stamped "DW 4553"-----	4, 555. 281
Baker ranch, 800 feet southeast of, north side of road; iron post stamped "DW 4495"-----	4, 496. 963

From Chicago & North Western Ry. bridge over Spring Creek to Rockerville.

Spring Creek, 0.5 mile north of, 90 feet southwest of crossing of county road and railroad; iron post stamped "DW 3326"-----	3, 328. 384
McMinn ranch, 350 feet northeast of, northeast side of intersection of road down Spring Creek with Rapid-Hermosa road; iron post stamped "DW 3350"-----	3, 352. 123
McMinn ranch, 1 mile west of, 25 feet north of road; copper nail in root of 18-inch elm tree-----	3, 383. 14
McMinn ranch, 2 miles west of, northeast corner of bridge over Spring Creek; copper nail in root of 15-inch cottonwood tree-----	3, 421. 40
McMinn ranch, 2.8 miles west of, 675 feet north of Erb ranch, 40 feet north of road, in sandstone 5 by 15 feet and 2 feet high; bronze tablet stamped "DW 3457"-----	3, 459. 187
Blair ranch, 400 feet northwest of, 45 feet northeast of intersection of Spring Creek, Rapid, and Rockerville roads; iron post stamped "DW 3511"-----	3, 513. 228
Blair ranch, 0.9 mile west of, north side of road; copper nail in root of 15-inch pine tree-----	3, 705. 73
Wright ranch, 1 mile east of, top of divide between Spring Creek and Rockerville Gulch, north side of road, iron post stamped "DW 4329"-----	4, 331. 111
Wright ranch, 800 feet west of, north side of road; copper nail in root of 12-inch pine tree-----	4, 342. 11

From Rockerville via McNown, Murphy, and Peterson ranches to Hermosa.

McNown ranch, 0.5 mile northwest of, 100 feet north of road, in limestone rock 6 by 2 feet outcropping in side of rocky hill, 20 feet higher than road; bronze tablet stamped "DW 4324"-----	4, 326. 500
McNown ranch, 0.9 mile southeast of, 25 feet west of road; copper nail in root of 6-inch pine tree-----	4, 250. 61
McNown ranch, 2.9 miles southeast of, 1.7 miles northwest of Murphy (Red Earth) ranch, 20 feet north of road on top of divide, in sandstone 4 by 2 feet and 15 inches high; bronze tablet stamped "DW 4063"-----	4, 065. 205

Murphy ranch, 1 mile southwest of, 1.4 miles northwest of Peterson ranch; 300 feet northwest of junction of roads, on bank of channel in gulch; copper nail in root of 8-inch pine tree-----	Feet. 3, 600. 99
Peterson ranch, 0.2 mile northwest of, northeast side of junction of Rockerville road with Hayward-Hermosa road; iron post stamped "DW 3525"-----	3, 527. 181
Peterson ranch, 0.8 mile south of, 100 feet northwest of Hayward-Hermosa road ford of Battle Creek, north bank of Battle Creek; copper nail in root of 20-inch oak tree-----	3, 457. 67
Beatty ranch, 0.6 mile east of, 450 feet southwest of intersection of the Squaw Creek and Battle Creek roads; iron post stamped "DW 3349"-----	3, 351. 061
Hermosa, 150 feet southwest of station, 60 feet west of track, in southwest corner of station agent's private yard; iron post stamped "DW 3300"-----	3, 302. 483

From Glendale via Spokane and Farmer, Ray, and Clark ranches to Fairburn.

Spokane, 500 feet northwest of post office, 300 feet north of school-house, on west side of road, in granite rock 8 by 10 feet and 18 inches high; bronze tablet stamped "DW 4521"-----	4, 523. 119
Farmer ranch, 1.6 miles southeast of, on north bank of ravine 60 feet east of road, in rock 3 feet high; bronze tablet stamped "DW 4086"-----	4, 088. 133
Ray ranch, southwest side of, intersection of Spokane, Hermosa, and Custer roads; iron post stamped "DW 3650"-----	3, 652. 171
Clark ranch, 0.3 mile east of, 350 feet north of Dry Creek, 50 feet south of cut-off road to Fairburn; iron post stamped "DW 3780"-----	3, 782. 714
Clark ranch, 0.7 mile southeast of, south side of road; copper nail in root of 12-inch elm tree-----	3, 697. 44
Laning ranch, 2.8 miles southeast of, top of ridge 1,000 feet east of gulch running into French Creek, north side of road, 375 feet southeast of quarter-section corner; iron post stamped "DW 3700"-----	3, 702. 025
Smith ranch, 0.5 mile north of, southwest side of road crossing, 2.5 miles west of Fairburn; iron post stamped "DW 3430"-----	3, 432. 012
Fairburn, 200 feet northeast of station, 40 feet northeast of county-road crossing; iron post stamped "DW 3310"-----	3, 312. 460

From Clark ranch to Richardson ranch via Hare and McClelland ranches.

Fay ranch, 2.5 miles northwest of, 500 feet southeast of top of ridge, in white limestone 2 by 4 feet and 1 foot high, on west side of road; bronze tablet stamped "DW 4223"-----	4, 225. 320
Hare ranch, 2.1 miles west of, 1 mile southwest of divide between French Creek ravine and Squaw Creek, on west side of road, on south bank of channel in ravine, in granite ledge 3 feet higher than road; bronze tablet stamped "DW 4664"-----	4, 666. 328
McClelland ranch, 0.1 mile west of, granite ledge north of and 4 feet higher than road; bronze tablet stamped "DW 5010"-----	5, 012. 355

From Combe ranch to Gould ranch.

Combe ranch, 0.3 mile south of, on west side of road; iron post stamped "DW 4696"-----	4, 698. 481
Kenoyer ranch, 0.6 mile east of, on north side of road, at point of rock outcrop 10 feet high, in rock 24 inches high; bronze tablet stamped "DW 4244"-----	4, 246. 287

McVey ranch, 1.7 miles east of, 300 feet north of intersection of Fairburn, Buffalo Gap, and Custer roads; iron post stamped "DW 3862 "	Feet. 3, 864. 320
Dowe ranch, 1.3 miles southeast of, 150 feet north of road down west branch of Lame Johnny Creek, 200 feet southwest of road from Fairburn, 600 feet west of intersection of roads, 1 mile southeast of Lame Johnny Creek, in sandstone outcrop 60 feet long; bronze tablet stamped "DW 3745 "	3, 747. 022
Gould ranch, 0.4 mile northwest of, 2 feet northwest of northwest corner of sec. 21, T. 5 S., R. 7 E., on Buffalo Gap-Rapid road, 250 feet southwest of junction with road up Lame Johnny Creek; iron post stamped "DW 3482 "	3, 484. 172

From Parker ranch via Highland ranch to Otey ranch.

Parker ranch, 1.8 miles west of, at intersection of Custer, Buffalo Gap, and Lame Johnny Creek roads; iron post stamped "DW 4312 "	4, 314. 260
Highland ranch, 0.4 mile northwest of, 75 feet east of intersection of Custer, Buffalo Gap, and Pringle roads, in rock outcrop 4 feet wide and 2 feet high; bronze tablet stamped "DW 4373 "	4, 375. 407
Otey ranch, 0.4 mile north of, on south side of road at intersection of road to Reeve ranch; iron post stamped "DW 4617 "	4, 619. 314

From Fairburn via Richardson and Grimley ranches to Nelson ranch.

Fairburn, 3 miles east of, 50 feet southeast of southeast corner of sec. 28, T. 4 S., R. 8 E., 50 feet southeast of intersection of roads, 250 feet north of bridge over French Creek; iron post stamped "D W 3184 "	3, 186. 107
Richardson ranch, 750 feet east of, 500 feet south of north quarter section corner of sec. 14, T. 5 S., R. 8-E., on west side of road; iron post stamped "DW 3298 "	3, 300. 141
Richardson ranch, 3.1 miles south of, 1.4 miles south of French Creek divide, top of ridge, 20 feet west of road; iron post stamped "DW 3179 "	3, 180. 933
Grimley ranch, 0.5 mile south and 0.5 mile east of, north side of road on top of ridge; iron post stamped "DW 3021 "	3, 023. 049
Nelson ranch, 2.3 miles southwest of, southeast corner of sec. 21, T. 6 S., R. 8 E., 450 feet northwest of road; iron post stamped "DW 3183 "	3, 184. 980

From Wood ranch to Wind Cave ranch.

Wood ranch, 600 feet southwest of, 500 feet east of bridge over Beaver Creek, 5 feet south of south fence, on large outcrop of rock, 1 foot above ground; bronze tablet stamped "DW 3365 "	3, 367. 236
Johnson ranch, 1.7 miles west of, on south side of road at junction of cut-off from Buffalo Gap-Custer road, foot of round hill with limestone ledge at top; iron post stamped "DW 3502 "	3, 504. 246
Martin Valley ranch, 2.2 miles west of, south side of road, in ledge of limestone 20 by 30 feet; bronze tablet stamped "DW 3810 "	3, 812. 408
Wind Cave ranch, 0.5 mile southeast of, 250 feet west of intersection of Buffalo Gap road with Wind Cave-Hot Springs road; iron post stamped "DW 4158 "	4, 160. 380

Wind Cave ranch, 3.3 miles southeast of, west side of high ridge, on south side of road, in limestone rock; bronze tablet stamped "DW 4233"-----	Feet. 4, 235. 506
From Grimley ranch via Cheyenne River and Morris, Smith, Stinger, Gramberg, and Bennett ranches to point 2 miles south of Brennan.	
Harrison Flat schoolhouse, 1 mile north and 1 mile east of, southeast corner of SW. $\frac{1}{4}$ sec. 8, T. 6 S., R. 9 E.; iron post stamped "DW 2964"-----	2, 965. 993
Harrison Flat schoolhouse, 3.2 miles northeast of, 1.7 miles south of mouth of Cottonwood Creek, west side of Cheyenne River bottom where road comes down bluff; nail in 10-inch cottonwood tree-----	2, 793. 01
Cottonwood Creek, 500 feet southwest of mouth of, west side of Cheyenne River bottom, south side of Cottonwood Creek bottom, 50 feet southwest of junction of trails running down Cottonwood Creek; iron post stamped "DW 2775"-----	2, 776. 902
Ayres ranch, 0.2 mile southwest of, on west line of Pine Ridge Indian Reservation, 700 feet south of Cheyenne River, quarter mile east of west corner of secs. 13 and 24, T. 5 S., R. 9 E., 150 feet north of road, in side of Indian monument; iron post stamped "DW 2738"-----	2, 740. 155
Cheyenne River, bed of, at northwest corner of Pine Ridge Indian Reservation-----	2, 730. 20
Ayres ranch, 3 miles northwest of, top of divide between French Creek and Cheyenne River, 25 feet north of road; iron post stamped "DW 3270"-----	3, 270. 981
Morris ranch, 75 feet southwest of, 9 miles east of, Fairburn, on north side of road, north side of French Creek; iron post stamped "DW 3008"-----	3, 010. 010
Morris ranch, 3.3 miles northwest of, about 0.5 mile northeast of junction of Alkali and Dry creeks, 500 feet south of junction of road to Battle Creek with Dry Creek-Hermosa road; iron post stamped "DW 3076"-----	3, 077. 866
Smith ranch, 0.5 mile north of, southeast corner of sec. 32, T. 3 S., R. 9 E., 0.25 mile west of road from French Creek to Hermosa; iron post stamped "DW 3162"-----	3, 163. 878
Stinger ranch, 1 mile southwest of, 75 feet southeast of intersection of roads to Hermosa, Battle Creek, and Cheyenne River; iron post stamped "DW 3212"-----	3, 213. 832
Stinger ranch, 0.6 mile east of, southeast corner of NE. $\frac{1}{4}$ sec. 7, T. 3 S., R. 9 E.; iron post stamped "DW 3137"-----	3, 138. 999
Stinger ranch, 1 mile east and 2.7 miles north of, 0.3 mile south of southeast corner of sec. 30, T. 2 S., R. 9 E., 30 feet southwest of road crossing; iron post stamped "DW 3278"-----	3, 279. 875
Vohmer ranch, 250 feet east of, on west side of road, 725 feet south of northeast corner of sec. 7, T. 2 S., R. 9 E., 450 feet south of Spring Creek; iron post stamped "DW 3133"-----	3, 134. 895
Gramberg ranch, 1 mile northwest of, at southwest corner of NW. $\frac{1}{4}$ sec. 31, T. 1 S., R. 9 E., 100 feet north of crossroads; iron post stamped "DW 3216"-----	3, 217. 875
Bennett ranch, 0.7 mile northeast of, at southeast corner of SW. $\frac{1}{4}$ sec. 17, T. 1 S., R. 8 E., 100 feet south of road; iron post stamped "DW 3155"-----	3, 156. 874

Brennan, 2 miles south of, 250 feet southeast of county-road crossing, 20 feet southwest of county road, southwest corner of Getchell ranch, 1 foot south of north quarter corner of sec. 14, T. 1 S., R. 8 E.; iron post stamped "DW 3160"-----	Feet. 3, 162.495
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From Buffalo Gap to Brennan.

Beaver Creek, on bridge, 15 feet above stream; top of rail-----	3, 260. 9
Buffalo Gap, 4.2 miles northeast of, 350 feet northeast of bridge H 112, 200 feet southeast of track, 100 feet southeast of wagon road, 2.5 feet east of fence corner post; iron post stamped "DW 3285"-----	3, 267. 405
Melvin siding, 180 feet south of north switch stand, west end of masonry culvert H 121, in top of southwest corner of coping stone; bronze tablet stamped "DW 3396"-----	3, 398. 535
T. 5 S., R. 7 E., 675 feet east and 30 feet north of south quarter corner of sec. 4, 700 feet north of section house 10, 60 feet west of track, 40 feet east of county road; iron post stamped "DW 3604"-----	3, 606. 376
Fairburn, 2.5 miles southwest of, 1,190 feet south of east quarter corner of sec. 27, T. 4 S., R. 7 E., 3 feet northwest of railroad fence, 60 feet southeast of angle in county road; iron post stamped "DW 3420"-----	3, 422. 412
Fairburn, 200 feet northeast of station, 40 feet northeast of county-road crossing; iron post stamped "DW 3310"-----	3, 312. 460
Hermosa, 5.8 miles south of, 270 feet north of section house 12, 60 feet southeast of county-road crossing, 6 feet northwest of fence-corner post; iron post stamped "DW 3430"-----	3, 432. 618
Hermosa, about 3 miles southwest of, 880 feet north of southeast corner of sec. 12, T. 3 S., R. 7 E., 180 feet north of bridge H 159, in center of county-road lane at bend in road; iron post stamped "DW 3458"-----	3, 460. 455
Hermosa, 150 feet southwest of station, 60 feet west of track, in southwest corner of station agent's private yard; iron post stamped "DW 3300"-----	3, 302. 483
Hermosa, 4.3 miles north of, 740 feet west of east side and 35 feet south of north side of sec. 8, T. 2 S., R. 8 E., 115 feet southwest of county-road crossing, 400 feet southeast of dwelling house, 50 feet northwest of track, 4 feet north of fence-corner post; iron post stamped "DW 3503"-----	3, 505. 442
Spring Creek, 200 feet south of, 200 feet south of section house 14, east end of stone culvert H 185½, on projection on top of south end of coping stone; chisel mark-----	3, 295. 19
Spring Creek, 0.5 mile north of, 90 feet southwest of crossing of north-south county road and railroad, 25 feet west of county road, 40 feet southeast of track, 80 feet southwest of crossing signpost marked U. S. G. S. B. M. W. P.; iron post stamped "DW 3326"-----	3, 328. 384
Brennan, 2 miles south of, 250 feet southeast of county-road crossing, 20 feet southwest of county road, southwest corner of Getchell ranch, 1 foot south of north quarter corner of sec. 14, T. 1 S., R. 8 E.; iron post stamped "DW 3160"-----	3, 162. 495
Brennan, 1,300 feet south of section house 215, 75 feet southwest of county-road crossing, 80 feet west of signpost marked "Brennan" and scribed U. S. G. S. B. M. W. P.; iron post stamped "DW 3114"-----	3, 116. 480

OELRICHS QUADRANGLE.

[Latitude 43°-48° 30'; longitude 103°-103° 30'.]

Near Hot Springs.

Hot Springs, 4.1 miles north of, east side of junction of Buffalo Gap-Hot Springs road with Hot Springs-Wind Cave road; iron post stamped "DW 3847"-----	Feet. 3, 849. 567
Hot Springs, south entrance to county courthouse, 2.5 feet east of steps, in vertical face of wall, 2.5 feet above ground; bronze tablet stamped "DW 3462"-----	3, 464. 369

Near Buffalo Gap.

Buffalo Gap, 5 miles east of, southeast corner of NE. $\frac{1}{4}$ sec. 25, T. 6 S., R. 7 E.; iron post stamped "DW 3221"-----	3, 222. 895
Buffalo Gap, 120 feet east of railroad ticket office, 150 feet north of wagon road along south side of sec. 29, T. 6 S., R. 7 E.; iron post stamped "DW 3258"-----	3, 260. 385

From Hot Springs via Chicago & North Western Ry. to Buffalo Gap.

Hot Springs, in front of union station; top of rail-----	3, 445. 6
Hot Springs, in front of Chicago & North Western Ry. station; top of rail-----	3, 430. 0
Hot Springs, 2.3 miles southeast of, 100 feet southwest of track, 300 feet south of bridge, H. S. 23, 150 feet southwest of wagon road, in northeast end of sandstone rock 20 by 10 feet and 4 feet high; copper bolt stamped "DW 3313"-----	3, 315. 550
Evans quarry, 450 feet north of post office, 200 feet north of falls of Fall River, 550 feet east of bridge H. S. 17, 50 feet north of and about 15 feet above track, in irregular sloping rock 10 by 3 feet and 3 feet high, 2 feet south of north end; copper bolt stamped "DW 3225"-----	3, 227. 329
Evans quarry, 1.8 miles northeast of, 40 feet northwest of bridge H. S. 15, 15 feet southwest of telegraph pole, 2 feet south of rock mound, on top of rock 2 by 1 foot and 1 foot out of ground; chisel mark-----	3, 341. 88
Buffalo Gap, 5 miles southwest of, 1,000 feet southwest of section house, 60 feet west of county road crossing, 25 feet southeast of northeast end of snow fence; iron post stamped "DW 3315"-----	3, 317. 502
Buffalo Gap, 2 miles southwest of, 290 feet west of county-road crossing, 30 feet south of county road, 1.5 feet south of stone marking northwest corner of T. 7 S., R. 7 E.; iron post stamped "DW 3410"-----	3, 412. 517
Buffalo Gap, in front of station, main track; top of rail-----	3, 259. 6
Buffalo Gap, 120 feet east of station ticket office, 150 feet north of wagon road running along south side of sec. 29, T. 6 S., R. 7 E.; iron post stamped "DW 3258"-----	3, 260. 385

RAPID QUADRANGLE.

[Latitude 44°-44° 30'; longitude 103°-103° 30'.]

From Brennan along Chicago & North Western Ry. via Rapid to Sturgis.

Rapid, 3 miles southeast of, sec. 23, T. 1 N., R. 8 E., 1,200 feet east of northwest corner and 30 feet south of north line, 50 feet west of track, 40 feet east of angle in county road; iron post stamped "DW 3218"	Feet. 3, 220. 450
Rapid, in front of ticket office, main track; top of rail	3, 200. 4
Rapid, courthouse yard, 80 feet southwest of southwest corner of courthouse, in center of top of United States Geological Survey astronomic pier; bronze tablet stamped "DW 3228." (Center of plate carefully centered over original cross cut in pier)	3, 230. 944
Rapid, 3 miles west of, 40 feet southeast of crossing of Rapid-Rochford wagon road, 400 feet east of section house 17; spike in west side of cottonwood tree, 6 inches above ground	3, 268. 65
Rapid, 5.2 miles northwest of, 65 feet southwest of crossing of Rapid and Blackhawk county road, 50 feet west of track, 80 feet south of crossing, signpost scribed U. S. G. S., B. M., W. P., 4 feet north of fence-corner post; iron post stamped "DW 3457"	3, 459. 586
Blackhawk, in front of ticket office; top of rail	3, 495. 7
Blackhawk, 100 feet northwest of station, in west corner of yard on northwest side of building; iron post stamped "DW 3491"	3, 493. 495
Blackhawk, 2.4 miles northwest of, top of divide between Blackhawk and Piedmont, 90 feet east of county-road crossing, 50 feet northeast of track, 25 feet south of county road along east and west section line, 1,150 feet east of northwest corner of sec. 31, T. 3 N., R. 7 E.; iron post stamped "DW 3622"	3, 624. 541
Piedmont, 1,400 feet southeast of station, southwest end of stone culvert H 238, northwest side of stream, in top of wing wall 1 foot below top of coping stone, 140 feet northeast of telegraph pole marked U. S. G. S., B. M., W. P.; bronze tablet stamped "DW 3460"	3, 462. 605
Tilford, 2 miles southeast of, about 75 feet northwest of point where Elk Creek wagon road crosses railroad track, 0.25 mile east of mouth of Elk Creek Canyon, 150 feet northwest of junction of Elk Creek wagon road with Sturgis-Rapid road; iron post stamped "DW 3565"	3, 567. 253
Tilford, in front of station; top of rail	3, 582. 0
Tilford, 2.25 mile northwest of, 45 feet northeast of railroad crossing, on east side of Sturgis-Rapid wagon road; iron post stamped "DW 3693"	3, 695. 711
Sturgis, 5.5 miles southeast of, about 500 feet southeast of Beaver siding mile board, on west end of south cap of bridge H 256; top of iron driftbolt	3, 665. 94
Sturgis, 4.5 miles southeast of, 960 feet southeast of switch at Myers siding, 50 feet north of track, 100 feet south of Sturgis-Rapid wagon road; iron post stamped "DW 3622"	3, 624. 303
Myers siding, at switch; top of rail	3, 619. 1
Sturgis, 2.8 miles southeast of, top of west end of north cap of bridge H 264, under which Sturgis-Rapid wagon road passes; iron driftbolt	3, 635. 23

At Pactola.

Pactola, junction of road from Rapid with roads from Hill City and Silver City, 3 feet south of corner 15, mineral claim 891; iron post stamped "DW 4459"-----	Feet. 4,461.143
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From Riley ranch to McDonald ranch.

Riley ranch, on Bogus Jim Creek, 2,000 feet northwest of, 10 feet southeast of road from Merritt, center of top of rock 8 by 7 by 2 feet; pine witness trees marked "U. S. G. S., B. M., W. T.," one 24-inch, northwest 75 feet, one 12-inch, north 75 feet, one 18-inch, northwest 30 feet; copper bolt stamped "DW 4801"-----	4,803.133
Jim Creek, 1,500 feet northeast of mouth, 190 feet north of highway bridge over Boxelder Creek, in east corner of flat rock 15 by 25 by 4 feet; pine witness trees marked "U. S. G. S., B. M., W. T.," one 18-inch, southwest 36 feet, one 15-inch, northwest 36 feet, one 18-inch, northeast 20 feet; bronze tablet stamped "DW 4413"-----	4,415.086
Estes ranch, 1.5 miles southeast of, 1,800 feet northwest of Elliott's sawmill, at west end of highway bridge over Boxelder Creek, east side of 2-foot pine tree; spike in root-----	4,459.63
Estes ranch, 150 feet northwest of dwelling, 12 feet northeast of county road up Boxelder Creek, 30 feet northwest of junction with road running down Estes Creek; spike in south root of 18-inch pine tree-----	4,565.61
McDonald ranch, 575 feet northwest of, 15 feet west of county road up Boxelder Creek, at junction with private road from ranch; witness trees marked "U. S. G. S. B. M. W. T.," one 18-inch, north 70 feet, one 18-inch, southeast 20 feet, one 12-inch, southwest 45 feet; iron post stamped "DW 4614"-----	4,616.041

From Pactola to Rockerville.

Pactola, junction of road from Rapid with roads from Hill City and Silver City, 3 feet south of corner 15, M. C. 891; iron post stamped "DW 4459"-----	4,461.143.
Harvey ranch, 800 feet north of, on top of divide, east side of road; iron post stamped "DW 5021"-----	5,023.316
Wetzell ranch, 2 miles south of, 2.5 miles north of intersection of Rapid, Pactola, and Sheridan roads, 30 feet east of road on top of divide; iron post stamped "DW 5042"-----	5,044.343
Wetzell ranch, 3 miles south of, 1.5 miles north of intersection of Rapid, Pactola, and Sheridan roads, on top of ridge, 25 feet east of road; iron post stamped "DW 4864"-----	4,866.168

SUNDANCE QUADRANGLE.

[Latitude 44°-44° 30'; longitude 104°-104° 30'.]

On McQuaig road.

McQuaig road, 3.7 miles west of intersection with Cheyenne-Deadwood stage road, 15 feet south of road fork; iron post stamped "DW 6539"-----	6,541.363
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Near Pratt ranch.

Pratt ranch (Bear Gulch), 1,000 feet east of, 45 feet south of road, on north bank of Potato Gulch, in quartzite cliff; aluminum tablet stamped "DW 5836"-----	5,837.060
Pratt ranch, 1 mile northeast of, north of road, in root of 15-inch pine tree; wire nail-----	5,846.66

Belle Fourche and Newell 30' quadrangles.**BUTTE, LAWRENCE, AND MEADE COUNTIES.**

The elevations in this list were originally based on a bronze tablet stamped "4543," set in the city-hall building at Deadwood in 1897, the elevation of which is now accepted as 4,545.672 feet above mean sea level. In 1908 the United States Coast and Geodetic Survey precise line redetermined United States Geological Survey bench marks near Edgemont, thus furnishing a more reliable connection with mean sea level.

The leveling in the Belle Fourche quadrangle was done in 1903 and 1904 by Chester Irvine, and in 1904 by M. S. Bright and C. H. Birdseye; that in the Newell quadrangle was done in 1904 by Chester Irvine and H. M. Hadley, and in 1910 by H. L. Caldwell. The leveling followed section lines almost to the exclusion of the few roads in this area.

BELLE FOURCHE 30' QUADRANGLE.

[Latitude 44° 30'–45°; longitude 103° 30'–104°.]

From point 900 feet east and 2,400 feet north of southwest corner of sec. 21, T. 9 N., R. 4 E., northwest to northwest corner of same section, thence north 4 miles to northwest corner of sec. 33, T. 10 N., R. 4 E., thence east to northwest corner of sec. 36 and south 4.8 miles to point 0.3 mile south of quarter corner between secs. 23 and 24, T. 9 N., R. 4 E.

	Feet.
T. 9 N., R. 4 E., 45 feet southeast of northwest stone at corner of sec. 9; iron post stamped "2880 DW"-----	2, 882. 168
T. 10 N., R. 4 E., northwest corner of sec. 33; iron post stamped "2891 DW"-----	2, 893. 117
T. 10 N., R. 4 E., northwest corner of sec. 35; iron post stamped "2920 DW"-----	2, 922. 238
T. 9 N., R. 4 E., northwest corner of sec. 1; iron post stamped "2872 DW"-----	2, 874. 127
T. 9 N., R. 4 E., northwest corner of sec. 13; iron post stamped "2877 DW"-----	2, 879. 207
T. 9 N., R. 4 E., 0.2 mile south of quarter corner between secs. 23 and 24; iron post stamped "2865 DW"-----	2, 867. 057

From northwest corner of sec. 16, T. 9 N., R. 4 E., west 1 mile, north 2 miles, east 2 miles, thence south 1 mile to northwest corner of sec. 33, T. 10 N., R. 4 E.

T. 9 N., R. 4 E., triangulation station No. 18, about 1,200 feet southwest of northwest corner of sec. 17; iron post stamped "3041 DW"-----	3, 043. 360
Tps. 9 and 10 N., Rs. 3 and 4 E., corner of; iron post stamped "2925 DW"-----	2, 927. 215
T. 10 N., R. 4 E., 30 feet south of quarter corner between secs. 19 and 30; iron post stamped "2904 DW"-----	2, 905. 778

From northwest corner of sec. 13, T. 9 N., R. 4 E., east 2 miles, south 1 mile east 1 mile, and south 2 miles to point 400 feet west of northwest corner of sec. 33, T. 9 N., R. 5 E.

T. 9 N., R. 5 E., northwest corner of sec. 20; iron post stamped "2871 DW"-----	Feet. 2, 872. 818
T. 9 N., R. 5 E., 400 feet west of northwest corner of sec. 33; iron post stamped "2981 DW"-----	2, 983. 402

From point 1,100 feet south of quarter corner between secs. 23 and 24, T. 9 N., R. 4 E., south 2 miles, east 1 mile, and south 1 mile, thence east 3 miles and north 0.5 mile to quarter corner between secs. 3 and 4, T. 8 N., R. 5 E., thence north 6.5 miles, west 1 mile, south 1 mile, west 2 miles, north 1 mile, and west 1 mile to northwest corner of sec. 1, T. 9 N., R. 4 E.

T. 9 N., R. 4 E., southeast corner of sec. 36; iron post stamped "2874 DW" (jog of 65 feet in north and south line)-----	2, 876. 366
T. 8 N., R. 5 E., 35 feet southwest of northwest corner of sec. 8; iron post stamped "2876 DW"-----	2, 878. 002
T. 8 N., R. 5 E., quarter corner between secs. 3 and 4, about 400 feet south of Owl Creek bridge; iron post stamped "2821 DW"-----	2, 827. 500
T. 9 N., R. 5 E., 25 feet west of northwest corner of sec. 34; iron post stamped "2854 DW"-----	2, 856. 394
T. 9 N., R. 5 E., 5 feet northeast of fence at northwest corner of sec. 22, west side of lane; iron post stamped "2826 DW"-----	2, 827. 776
T. 9 N., R. 5 E., 3 feet east of northwest corner of sec. 10; iron post stamped "2902 DW"-----	2, 904. 638
Tps. 9 and 10 N., R. 5 E., northwest corner of sec. 4; iron post stamped "2858 DW"-----	2, 860. 348
T. 9 N., R. 5 E., northwest corner of sec. 8; iron post stamped "2871 DW"-----	2, 873. 234

From northwest corner of sec. 39, T. 12 N., R. 5 E., south 2 miles, west 3 miles, and south 7 miles to northwest corner of sec. 10, T. 10 N., R. 9 E.

T. 12 N., R. 5 E., northwest corner of sec. 30; iron post stamped "3164 DW"-----	3, 166. 246
T. 11 N., R. 4 E., northwest corner of sec. 1; iron post stamped "3194 DW"-----	3, 196. 076
T. 11 N., R. 4 E., northwest corner of sec. 10; iron post stamped "3196 DW"-----	3, 198. 354
T. 11 N., R. 4 E., northwest corner of sec. 27; iron post stamped "3044 DW"-----	3, 046. 298
T. 10 N., R. 4 E., northwest corner of sec. 10; iron post stamped "3028½ DW"-----	3, 030. 748

From corner of Tps. 9 and 10 N., Rs. 3 and 4 E., west 2 miles, north 1 mile, and west 1 mile, thence north 12 miles to northwest corner of sec. 34, T. 12 N., R. 3 E., thence west 6 miles to northwest corner of sec. 34, T. 12 N., R. 2 E., thence south 14 miles to northwest corner of sec. 10, T. 9 N., R. 2 E., thence east 1 mile and south 3 miles to northwest corner of sec. 26, T. 9 N., R. 2 E.

T. 10 N., R. 3 E., northwest corner of sec. 35; iron post stamped "3054 DW"-----	3, 056. 137
T. 10 N., R. 3 E., northwest corner of sec. 22; iron post stamped "2956 DW"-----	2, 968. 131
Tps. 10 and 11 N., R. 3 E., northwest corner of sec. 3; iron post stamped "2948 DW"-----	2, 950. 1

T. 11 N., R. 3 E., northwest corner of sec. 22; iron post stamped "3043 DW"	Feet. 3, 045. 073
T. 11 N., R. 3 E., near northwest corner of sec. 8 (no corner post found), at heap of rocks; iron post stamped "3117 DW"	3, 119. 169
T. 12 N., R. 3 E., 30 feet northwest of northwest corner of sec. 32; iron post stamped "3126 DW"	3, 128. 367
T. 12 N., R. 2 E., quarter corner between secs. 26 and 35; iron post stamped "3114 DW"	3, 116. 026
T. 11 N., R. 2 E., northwest corner of sec. 10; iron post stamped "3104 DW"	3, 106. 144
T. 11 N., R. 2 E., 800 feet west and 180 feet north of northwest corner of sec. 27, on summit of divide between Owl and Indian creeks; iron post stamped "3297 DW"	3, 299. 160
T. 10 N., R. 2 E., 30 feet southwest of northwest corner of sec. 10; iron post stamped "3034 DW"	3, 036. 262
T. 10 N., R. 2 E., between corner pits at northwest corner of sec. 27; iron post stamped "3114 DW"	3, 116. 141
T. 9 N., R. 2 E., 1 foot west of northwest corner of sec. 11; iron post stamped "3250 DW"	3, 252. 097
T. 9 N., R. 2 E., at corner of secs. 22, 23, 26, and 27; iron post stamped "3076 DW"	3, 078. 408

From northwest corner of sec. 34, T. 12 N., R. 4 E., west 6 miles, thence south 13 miles to northwest corner of sec. 3, T. 9 N., R. 1 E., thence east 1 mile, south 1 mile, and east 5 miles to northwest corner of sec. 10, T. 9 N., R. 2 E.

T. 12 N., R. 2 E., northwest corner of sec. 31; iron post stamped "3130 DW"	3, 132. 100
T. 12 N., R. 1 E., northwest corner of sec. 34 (no corner found), in small draw 10 feet west of Alzada road; iron post stamped "3238 DW"	3, 240. 208
T. 11 N., R. 1 E., northwest corner of sec. 15; iron post stamped "3123 DW"	3, 125. 159
T. 11 N., R. 1 E., 450 feet north of northwest corner of sec. 3, T. 10 N., R. 2 E. (no corner post found), 150 feet northwest of clump of three trees, in small creek bed; iron post stamped "3187 DW"	3, 189. 173
T. 10 N., R. 1 E., between corner pits northwest corner of sec. 22; iron post stamped "3322 DW"	3, 324. 307
Tps. 9 and 10 N., R. 1 E., 1 foot west of northwest corner of sec. 2; iron post stamped "3181 DW"	3, 183. 371
T. 9 N., Rs. 1 and 2 E., 3 feet west of northwest corner of sec. 7; iron post stamped "3126 DW"	3, 128. 291

From Spearfish along county road to Belle Fourche, thence to The Forks.

T. 7 N., R. 2 E., 1,200 feet south of quarter corner between secs. 34 and 27; iron post stamped "3601 DW 1903"	3, 603. 074
T. 7 N., R. 2 E., 1,200 feet north of quarter corner between secs. 10 and 15; iron post stamped "3343 DW 1903"	3, 345. 420
Willow Creek bridge, 400 feet south of, at fence corner, 40 feet north of crossing of roads; iron post stamped "3360 DW 1903"	3, 162. 184
T. 8 N., R. 1 E., 300 feet east of stone at corner of secs. 11, 12, 13, and 14, forks of road; iron post stamped "3373 DW 1903"	3, 374. 932
Joost schoolhouse, 100 feet north of; iron post stamped "3274 DW 1903"	3, 276. 199

The Forks (Robinson ranch), at junction of old Miles City stage road with road from Aladdin (coal bank), in sandstone boulder 6 by 8 inches, 17 inches above ground; aluminum tablet stamped "3398 DW " ----- Feet.
3, 400. 235

From Belle Fourche along Three V ranch road to Middle Creek Butte.

Belle Fourche, northeast corner of Butte County jail; iron post stamped "3036 DW 1903" ----- 3, 038. 478
Belle Fourche, Butte County courthouse, southeast corner of yard, in stone; azimuth tablet stamped "3011 DW " ----- 3, 013. 438
Belle Fourche, 2.9 miles west of, 10 feet south of road, on rise near fence; iron post stamped "3098 DW 1903" ----- 3, 100. 099
T. 9 N., R. 1 E., NE. $\frac{1}{4}$ sec. 22, 30 feet south of wagon road; iron post stamped "3204 DW 1903" ----- 3, 205. 987
Three V ranch, 2.5 miles north of; iron post ----- 3, 180. 891

From Belle Fourche along county road via Richardson ranch and Giles Crossing to Belle Fourche.

T. 9 N., R. 2 E., corner of secs. 22, 23, 26, and 27; iron post stamped "3076 DW 1903" ----- 3, 078. 408
T. 9 N., R. 3 E., 0.2 mile north of quarter corner between secs. 29 and 32; iron post stamped "3029 DW 1903" ----- 3, 030. 733
T. 8 N., R. 3 E., just south of northwest corner of sec. 4; iron post stamped "3004 DW 1903" ----- 3, 005. 901
T. 8 N., R. 3 E., quarter corner between secs. 7 and 18; iron post stamped "3187 DW 1903" ----- 3, 189. 204

From Belle Fourche along railroad to St. Onge, thence along county road to Centennial Prairie.

T. 8 N., R. 3 E., corner of secs. 26, 30, 31, and 36; iron post stamped "3149 DW 1903" ----- 3, 151. 038
T. 7 N., R. 3 E., 0.2 mile north of and 2,300 feet west of southeast corner of sec. 9; iron post stamped "3314 DW 1903" ----- 3, 319. 166
St. Onge, 200 feet west of station, 2,000 feet east of southwest corner of sec. 23, T. 7 N., R. 3 E.; iron post stamped "3428 DW 1903" ----- 3, 430. 013
T. 6 N., R. 3 E., corner of secs. 2, 3, 10, and 11; iron post stamped "3614 DW 1903" ----- 3, 616. 106

From Belle Fourche along county road via Snoma and Big Bottom to St. Onge.

T. 8 N., R. 3 E., 900 feet north of corner of secs. 14, 15, 22, and 23; iron post stamped "3097 DW 1903" ----- 3, 099. 334
T. 8 N., R. 4 E., quarter corner between secs. 17 and 20; iron post stamped "2920 DW 1903" ----- 2, 922. 230
T. 8 N., R. 4 E., corner of secs. 13, 14, 23, and 24; iron post stamped "2940 DW 1903" ----- 2, 942. 054
T. 8 N., R. 5 E., corner of secs. 15, 16, 21, and 22; iron post stamped "2886 DW 1903" ----- 2, 888. 154
T. 7 N., R. 5 E., 1,100 feet east of corner of secs. 4, 5, 8, and 9; iron post stamped "2984 DW 1903" ----- 2, 986. 233
T. 7 N., R. 5 E., center of sec. 29; iron post stamped "3132 DW 1903" ----- 3, 134. 149

Lake Preston, 4.4 miles south of, 133.4 meters from Hansen triangulation station, and 68 meters west of center of section, at south road fence running east and west through center of section, at corner formed by partition fence running south; nail in top of terra-cotta pipe (Hansen Reference Mark)-----	Feet. 1, 728. 848
Lake Preston, 5 kilometers south of, between secs. 24 and 25, T. 110, R. 55; and secs. 19 and 30, T. 110, R. 24, in center of cross-roads; center of top of granite boulder flush with ground (C. & G. S. b. m. Section Corner 3)-----	1, 713. 218
Oldham, 165 meters north of railway station, 18 meters west of railway, on gray-quartz boulder forming foundation under north-east corner of Farmers' Elevator; 0.04 meter west of east edge, 0.35 meter south of corner, 0.2 meter above ground; square cut (C. & G. S. b. m. V.)-----	1, 720. 508
Oldham, on east end of south window sill (red sandstone) of First State Bank; 1 centimeter west and 2 centimeters south of brick-work at east side of window, at sidewalk line and 0.7 meter above it; surface within an outline square (C. & G. S. b. m. W)-----	1, 726. 404
Oldham, 2 kilometers south of, on south line of sec. 27, T. 109, R. 54, 12 meters east of railway, 11 meters north of highway, on right-of-way line, 3 meters north of highway line, 0.2 meter below rails; top of $\frac{3}{8}$ -inch copper bolt in top of stone post (C. & G. S. b. m. X ₁)-----	1, 728. 356
Oldham, 5 kilometers south of, on east line of sec. 3, T. 108, R. 54; 12 meters south of railway, 10 meters west of highway, on right-of-way line, 2 meters west of highway line, at level of rails; 3-inch red-metal cap on iron pipe (C. & G. S. b. m. Y ₁)-----	1, 729. 800
Ramona, on sandstone foundation of S. Y. Hyde elevator, 85 meters south of railway station, on fourth course above ground, at south-east corner; bottom of hole in horizontal surface (C. & G. S. b. m. Z ₁)-----	1, 803. 130
Ramona, 260 meters south of railway station, 15 meters north of quarter section road through sec. 32, T. 108, R. 53; 14 meters east of main track; on granite rock in situ, exposed 0.2 by 0.5 meter, 0.1 meter above ground; bottom of hole in horizontal surface (C. & G. S. b. m. A ₂)-----	1, 800. 452
Ramona, 1.2 kilometers south of, 14 meters east of railway, 192 meters east of southwest corner of sec. 33, T. 108, R. 53; 8 meters north of south line of that section, 2 meters north and 1 meter east of adjacent fences; top of $\frac{3}{8}$ -inch copper bolt in top of stone post (C. & G. S. b. m. B ₂)-----	1, 798. 218
Ramona, 4.1 kilometers south of, 1,047 meters south of north line of sec. 9, T. 107, R. 53; 8 meters east of railway, 7 meters north of private road, 0.4 meter below rail; 3-inch red-metal cap on iron pipe (C. & G. S. b. m. C ₂)-----	1, 777. 060
Ramona, 8 kilometers south of, 270 meters 15° north of west of south-east corner of sec. 22, T. 107, R. 53, 101 meters north of south line of section, 14 meters west of railway; on small boulder, 0.6 by 0.4 by 0.3 meter, set flush with ground, 1 meter east of fence and 1.1 meters below rail; bottom of hole in horizontal surface (C. & G. S. b. m. D ₂)-----	1, 737. 661
Ramona, 8 kilometers south of, between secs. 21, 22, 27, 28, T. 107, R. 53; on small boulder; bottom of hole in horizontal surface (C. & G. S. b. m. Section Corner 4)-----	1, 729. 101

Stanley, a little above town of, which is on opposite bank, on left bank, 2.5 miles below 246—2, just above mouth of small creek and 30 feet back from abrupt slope to river, 50 feet north of small shack in side of hill, near river bank; surface of stone under iron pipe (Mo. R. Comm. b. m. 247—2)-----	Feet. 1, 450. 30
Fort Pierre, on right bank, 700 feet back from river, 700 feet above Bad River, on a gumbo hill just back of houses on Deadwood Street; surface of stone under iron pipe (Mo. R. Comm. b. m. 248—1)-----	1, 450. 79
Pierre, on left bank, in courthouse yard, on west side; surface of stone under iron pipe (Mo. R. Comm. b. m. 248—2)-----	1, 490. 58
Pierre, at corner of Pierre Street and Sioux Avenue; top of cap on hydrant (Mo. R. Comm. b. m.)-----	1, 437. 10
Pierre, on doorstep at entrance to National Bank of Commerce building (U. S. Weather Bureau b. m.)-----	1, 440. 69
Pierre Indian Training School, just inside of fence around, on left bank, 100 feet north by 150 feet west of northwest corner of main building, 2 feet south of sixth fence post south of gate at entrance to grounds; surface of stone under iron pipe (Mo. R. Comm. b. m. 249—2)-----	1, 443. 37
Pierre, 3.5 miles below, on left bank, on small gumbo knoll opposite about the middle of Farm Island, 150 feet from river bank, 225 feet from Chicago & North Western Ry., at a point 90 feet below bridge 283; surface of stone under iron pipe (Mo. R. Comm. b. m. 250—2)-----	1, 440. 31
Barth triangulation station, just above high knoll on which station is located, 0.25 mile back of 250—2 in coulee, on left bank, house on top of hill directly back about 0.5 mile; surface of stone under iron pipe (Mo. R. Comm. b. m. 250—3)-----	1, 469. 63
Pierre, 6.3 miles below, on left bank, 1,000 feet from river bank, on low bench land, just above fence line which runs to river bank and above a grove of small cottonwood trees; surface of stone under iron pipe (Mo. R. Comm. b. m. 251—2)-----	1, 422. 16
Pierre, 9 miles below, on left bank, 200 feet from river, where prairie bottom slopes up and gets higher along the river, just above line of fence which runs to river bank, 0.25 mile below shack and 0.25 mile above another shack; surface of stone under iron pipe (Mo. R. Comm. b. m. 252—2)-----	1, 421. 18
Milepost 271; 240 feet back from Chicago and North Western Ry. track at a point 40 feet above, 270 feet above road crossing, in flat gumbo bottom, on left bank; surface of stone under iron pipe (Mo. R. Comm. b. m. 252—3)-----	1, 424. 95
Rousseau, on left bank, straight out from 253—3 0.25 mile, just back of brush along river bank, 15 feet east of small patch of cultivated land; surface of stone under iron pipe (Mo. R. Comm. b. m. 253—2)-----	1, 414. 40
Rousseau, on left bank, on side hill just on corner of bluffs bounding Creek valley and Missouri River valley, 1,000 feet above section house, 1,000 feet southeast of black cross in graveyard, 100 feet from foot of hill is railroad; surface of stone under iron pipe (Mo. R. Comm. b. m. 253—3)-----	1, 434. 56
Rousseau, 3 miles below, 0.8 mile from river, on left bank, on gentle slope of bluffs, 150 feet back from slope to timbered bottom; surface of stone under iron pipe (Mo. R. Comm. b. m. 254—2)-----	1, 447. 80

DEGREY QUADRANGLE.

[Latitude 44°-44° 30'; longitude 99° 30'-100°.]

From point 3 miles below Rousseau southerly, easterly, northwesterly, easterly,
and southerly along Missouri River to point near Cow Creek Indian Agency.

Rousseau, 6 miles below, on left bank, 80 feet from edge of cut bank, near old trail leading to water, on spur between two small draws, 400 feet below mouth of creek, near several large trees; surface of stone under iron pipe (Mo. R. Comm. b. m. 255-2)-----	Feet. 1, 431. 31
Rousseau, 6 miles below, on left bank, 700 feet from river, on top of high rolling plateau, 180 feet below slope into wide coulee in which are large trees near mouth, also two shacks, one above and one below creek bed; surface of stone under iron pipe (Mo. R. Comm. b. m. 255-3)-----	1, 461. 26
Rousseau, 9 miles below, on left bank, 600 feet from river bank, 0.5 mile above Chapelle Creek, 20 feet from edge of slope into low bottom covered with willows and brush, 340 feet below corner of fence; surface of stone under iron pipe (Mo. R. Comm. b. m. 256-2)-----	1, 408. 21
Rousseau, 9 miles below, on left bank, 0.3 mile back from 256-2, on bench land about 200 feet from edge of slope and 900 feet below small shack; surface of stone under iron pipe (Mo. R. Comm. b. m. 256-3)-----	1, 424. 19
Chapelle Creek, 3 miles below, on left bank, opposite end of willows of shore bar, on slope of hills, 75 feet from edge of an abrupt slope to river, coulee just below; surface of stone under iron pipe (Mo. R. Comm. b. m. 257-2)-----	1, 448. 13
Chapelle Creek, 6 miles below, on left bank, 0.25 mile below head of bottom, and one-half mile above head of Dorion Island No. 2, on edge of first bench land, 20 feet from edge of abrupt slope; surface of stone under iron pipe (Mo. R. Comm. b. m. 258-2)-----	1, 438. 98
Chapelle Creek, 6 miles below, on top of plateau, on left bank, 530 feet east by 470 feet south of b. m. 258-2; surface of stone under iron pipe (Mo. R. Comm. b. m. 258-3)-----	1, 456. 39
St. Dorion Island No. 1, 0.5 mile below head of, on left bank, on high plateau, 350 feet from river and 150 feet from edge of slope of plateau, on northeast corner of NE. $\frac{1}{4}$ sec. 13, T. 108, R. 75, the azimuth from bench mark to section corner being 176° 11' and distance 382 feet; surface of stone under iron pipe (Mo. R. Comm. b. m. 259-2)-----	1, 443. 26
St. Dorion Island No. 1, near head of, on left bank, 3 miles below 260-3, on sand ridge which forms a well-defined bench meeting river bank about 500 feet below, a few scattered trees and brush are on lower bottom; surface of stone under iron pipe (Mo. R. Comm. b. m. 260-2)-----	1, 402. 81
St. Dorion Island No. 1, 3.5 miles below head of, on left bank, 0.5 mile from river, on slope from bottom to high bench land, 360 feet below coulee; surface of stone under iron pipe (Mo. R. Comm. b. m. 260-3)-----	1, 425. 30
St. Dorion Island No. 1, 5 miles below head of, on left bank, 700 feet from river, timber commences about 1,000 feet below along river bank, ruins of old shack on edge of low brush land about 600 feet back, there is also a shack one-half mile below; surface of stone under iron pipe (Mo. R. Comm. b. m. 261-2)-----	1, 395. 15

St. Dorion Island No. 1, 8.5 miles below head of, 300 feet from river, below end of timber, on low bench, 20 feet from edge of slope to narrow point of bottom; surface of stone under iron pipe (Mo. R. Comm. b. m. 262—2)-----	Feet. 1,402. 12
St. Dorion Island No. 1, 8.5 miles below head of, on left bank, 1,000 feet from river, on slope of hills just back from end of timber, brush about 300 feet below along coulee, large trees at foot of high hills about 700 feet back; surface of stone under iron pipe (Mo. R. Comm. b. m. 262—3)-----	1, 443. 92
St. Dorion Island No. 1, 11.8 miles below, on left bank, on slope of hill between two small coulees, just above where rough country begins near river bank, about 70 feet back from where slope is abrupt to cut bank of river; surface of stone under iron pipe (Mo. R. Comm. b. m. 263—2)-----	1, 423. 90
St. Dorion Island No. 1, 11.8 miles below, on left bank, 400 feet from river, on slope of hill about 1,000 feet below where timber begins along river, just above third small coulee below timber; surface of stone under iron pipe (Mo. R. Comm. b. m. 264—2)-----	1, 426. 74
St. Dorion Island No. 2, 11.8 miles below, on left bank, 600 feet back of bench mark 264—2, on gentle slope toward small coulee, which heads just back of and below bench mark; surface of stone under iron pipe (Mo. R. Comm. b. m. 264—3)-----	1, 447. 15
St. Dorion Island No. 1, 15.3 miles below, on left bank, on sand hill about 400 feet back of timber line, a bunch of choke-cherry bushes is about 25 feet back, a well-defined bench about 12 feet high is about 600 feet back; surface of stone under iron pipe (Mo. R. Comm. b. m. 265—2)-----	1, 391. 71
Big Bend, on neck of, on right bank, opposite a point on left bank about 1,000 feet above lower end of timber, on spur from foot of hills, 40 feet back is abrupt slope up, brush is scattered along side hills below; surface of stone under pipe (Mo. R. Comm. b. m. 266—1)-----	1, 423. 65
St. Dorion Island No. 1, 17.8 miles below, on left bank, on edge of first bench land, back of timber and 0.25 mile above end of it; surface of stone under iron pipe (Mo. R. Comm. b. m. 266—2)-----	1, 390. 22
Devils Island, opposite center of timber on, 100 feet from river on right bank, on small broken ridge running parallel with river, at upper end of row of large trees; surface of stone under iron pipe (Mo. R. Comm. b. m. 267—1)-----	1, 402. 30
Big Bend, on point of, at end of narrow belt of large timber along river bank opposite foot of St. John Island, on right bank, on a spur of broken rolling bench land where it turns and bottom land begins; surface of stone under iron pipe (Mo. R. Comm. b. m. 268—1)-----	1, 405. 36
Big Bend, 3 miles below point of, 800 feet back of bench mark 269—2, on right bank, on flat bottom land; surface of stone under iron pipe (Mo. R. Comm. b. m. 269—1)-----	1, 372. 37
Big Bend, 3 miles below point of, on right bank, 0.3 mile from river, on sand hill just back of timber, 0.25 mile above an old shack; surface of stone under iron pipe (Mo. R. Comm. b. m. 269—2)-----	1, 383. 00
Big Bend, 6 miles below point of, on right bank, on long sand ridge, at lower end of timber along river, a low bottom is back of it with scattered small brush and few large trees; surface of stone under iron pipe (Mo. R. Comm. b. m. 270—1)-----	1, 377. 37

Big Bend, 10 miles below point of, on right bank, on low bench land about 700 feet from river and opposite lower end of timber on left bank, 500 feet from where higher bench starts out, 100 feet above a single large cottonwood tree, 50 feet below 3 or 4 small ones; surface of stone under iron pipe (Mo. R. Comm. b. m. 271—1)-----	Feet. 1,368.40
Big Bend, 14 miles below point of, on right bank, on bench land about 50 feet from edge and 150 feet above small coulee, with two large trees near mouth and small trees for 500 feet back, 150 feet below old shack, 500 feet in front of another shack, gate of Government fence is back of brush line a little above bench mark; surface of stone under iron pipe (Mo. R. Comm. b. m. 272—1)-----	1,384.73
William Smith's shack, 70 feet north by 25 feet east from northeast corner of, "Good Roads's" shack is across the creek and nearly north of bench mark, on right bank; surface of stone under iron pipe (Mo. R. Comm. b. m. 273—1)-----	1,401.18
Big Bend, 17 miles below, on right bank, 500 feet from river bank, just below a creek and about 1 mile from where high bluffs commence to strike the river, 150 feet west from small knoll, two shacks are about 0.3 mile back where William Smith lives, and "Good Roads" lives just above bench mark near creek; surface of stone under iron pipe (Mo. R. Comm. b. m. 273—2)-----	1,372.01

STEPHAN QUADRANGLE.

[Latitude 44°-44° 30'; longitude 99°-99° 30']

From point near Crow Creek Indian Agency southeast along Missouri River to point near Old Fort Hale.

Crow Creek Indian Agency, near, on right bank, 20 feet back from edge of cut bluff bank, a deep coulee is above it with high rock bank on upper side and low bank on other side, a small deep coulee is also below bench mark; the sides of bluffs back and a little below are covered with cedar trees; surface of stone under iron pipe (Mo. R. Comm. b. m. 274—1)-----	1,380.42
Crow Creek Indian Agency, opposite, on right bank, on small ridge, on upper side of small creek valley, brush and trees are along the creek and a patch of brush is just above bench mark; surface of stone under iron pipe (Mo. R. Comm. b. m. 275—1)-----	1,374.70
Old Fort Hale, near site of, on right bank, 3 miles below Crow Creek Indian Agency, on spur of broken plateau just above small creek, 300 feet from river, a little below lower end of heavy timber on left bank; surface of stone under iron pipe (Mo. R. Comm. b. m. 276—1)-----	1,392.78

OACOMA QUADRANGLE.

[Latitude 43° 30'-44°; longitude 99°-99° 30'.]

From point near site of Old Fort Hale southerly along Missouri River to Chamberlain.

Old Fort Hale, at site of, on right bank, on low foothills about 150 feet below an old excavation, directly back from a grove of large trees in bottom, brush is along foot of bluffs and in coulee just below; surface of stone under iron pipe (Mo. R. Comm. b. m. 277—1)-----	1,365.69
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Old Fort Hale, 3 miles below site of, on right bank, on top of high broken plateau, 200 feet below a coulee up which runs a wagon road from bottom, frame house in bottom directly in front of it and Indian shack on plateau about 300 feet north and west, 100 feet from corner of a fence; surface of stone under iron pipe (Mo. R. Comm. b. m. 278—1)-----	Feet. 1, 394. 96
Old Fort Hale, 6.5 miles below site of, on right bank, 400 feet above where river strikes bluffs and just above first coulee back from where river strikes bluffs, on spur from high bluffs about 20 feet from edge of cut bluff bank; surface of stone under iron pipe (Mo. R. Comm. b. m. 279—1)-----	1, 374. 12
Old Fort Hale, 10 miles below, on right bank, on spur of hills just below a coulee, a small shack is 200 feet above and a frame house about 700 feet below; surface of stone under iron pipe (Mo. R. Comm. b.m. 280—1)-----	1, 360. 83
Old Fort Hale, 11.5 miles below site of, on low bench land back from end of timber along river, four large trees are in prairie below and a strip of brush is along foot of bench, a little above a small two-story house on second bench; surface of stone under iron pipe (Mo. R. Comm. b. m. 281—1)-----	1, 345. 60
Chamberlain, at center of intersection of Main and Clemens streets; on cast-iron monument 2.5 feet long, set about 1 foot below surface of street (City bench mark)-----	1, 391. 87
Chamberlain, on brick water table at northeast corner of Taft House	1, 414. 38
Chamberlain, on water table of High School, close up to brickwork of northwest corner of building, 4 inches above ground; beveled edge of water table on north side is painted white and marked "1,468.22 feet above sea level"-----	1, 468. 17
Chamberlain, in High School yard, 90 feet west and 18 feet north from southwest corner south wing of this building; surface of stone under iron pipe (Mo. R. Comm. b. m. 282—2)-----	1, 453. 61
From Chamberlain southerly along Missouri River to point near Bijou Hills.	
Chamberlain, 2 miles below, on left bank, 0.25 mile above foot of American Island, 250 feet below small frame house, 100 feet from river; stone surmounted by iron pipe (Mo. R. Comm. b. m. 283—2), surface of stone-----	1, 354. 04
American Creek, opposite mouth of, on left bank, just below small creek, 100 feet in front of house of George Linebeck; stone surmounted by iron pipe (Mo. R. Comm. b. m. 284—2), surface of stone-----	1, 360. 52
Brule Indian Agency, 135 feet west by 55 feet south of southwest corner of agent's office, in southwest corner of yard, on right bank; stone surmounted by iron pipe (Mo. R. Comm. b. m. 284—1), surface of stone-----	1, 368. 54
Peterson Creek, 150 feet above, 700 feet from river, on left bank, on first bench, 100 feet back from edge of bank; stone surmounted by iron pipe (Mo. R. Comm. b. m. 285—2), surface of stone-----	1, 349. 31
Peterson Creek, 400 feet above, 0.25 mile back of 285—2, on south side of young grove or timber claim; stone surmounted by iron pipe (Mo. R. Comm. b. m. 285—3), surface of stone-----	1, 365. 61

Peterson Bottom, 0.25 mile above end of, on left bank, 350 feet from river, on nose of bluffs below small wooded coulee; stone surmounted by iron pipe (Mo. R. Comm. b. m. 286—2), surface of stone-----	Feet. 1,363.00
White River, 1.5 miles below, 2,000 feet below head of bottom, on edge of low broken bench land, 200 feet from foot of bluffs, 650 feet from river, on left bank; stone surmounted by iron pipe (Mo. R. Comm. b. m. 287—2), surface of stone-----	1,338.71
David Forbes's house, 500 feet southwest of, 800 feet from river, on first bench, 2 miles below 287—2, on left bank; stone surmounted by iron pipe (Mo. R. Comm. b. m. 288—2), surface of stone-----	1,329.94
David Forbes's house, 800 feet north of, 0.25 mile back of 288—2, on flat prairie, 300 feet north of wagon road; stone surmounted by iron pipe (Mo. R. Comm. b. m. 288—3), surface of stone-----	1,328.18
David Forbes's house, 3 miles below, on left bank, 400 feet from foot of steep bluffs, on gentle slope and near corner of wire fence, just outside of inclosure, 800 feet northwest of log shack; stone surmounted by iron pipe (Mo. R. Comm. b. m. 289—2), surface of stone-----	1,352.44
General Brooks Island, opposite head of, on lower side of small coulee with single large elm tree at mouth, on left bank, at end of bottom, on bench land 250 feet from river; stone surmounted by iron pipe (Mo. R. Comm. b. m. 290—2), surface of stone-----	1,362.04
Sonora Island, near foot of, on left bank, 100 feet from river on nose of bluffs below small steep coulee; stone surmounted by iron pipe (Mo. R. Comm. b. m. 291—2), surface of stone-----	1,363.05
Elm Creek, 400 feet below, on left bank, on high bench land, 150 feet from river, 1,000 feet south of house and barn of La Follette's horse ranch; stone surmounted by iron pipe (Mo. R. Comm. b. m. 292—2), surface of stone-----	1,339.24
La Follette's horse ranch, 100 feet south of house at, 1,000 feet back of b. m. 292—2, just inside of fence around barnyard, 300 feet below creek; stone surmounted by iron pipe (Mo. R. Comm. b. m. 292—3), surface of stone-----	1,352.13
Bijou Hills, above, 1.5 miles below end of bottom, 2.5 miles below 292—2, on left bank, 0.25 mile below small creek, 20 feet north of road up bottom just back of brush and timber line; stone surmounted by iron pipe (Mo. R. Comm. b. m. 293—2), surface of stone-----	1,319.36

HERRICK QUADRANGLE.

[Latitude 43°—43° 30'; longitude 99°—99° 30'.]

From point near Bijou Hills southeast along Missouri River to point near Cedar Creek.

Bijou Hills, near, on left bank, 3 miles below 293—2, on lower side of small coulee where level bench land begins, 125 feet from river, 150 feet south of old foundation of shack; stone surmounted by iron pipe (Mo. R. Comm. b. m. 294—2), surface of stone-----	1,334.17
Durex Island, opposite foot of, on left bank, on level plateau, 130 feet from edge of abrupt slope to river, 0.25 mile above head of bottom, 1 mile above upper house of Rhodes's ranch; stone surmounted by iron pipe (Mo. R. Comm. b. m. 295—2), surface of stone-----	1,347.72

Durex Island, 0.25 mile back of foot of, on gentle slope, 500 feet from foot of abrupt slope of high bluffs, 200 feet west of fence line, on left bank; stone surmounted by iron pipe (Mo. R. Comm. b. m. 295—3), surface of stone.....	Feet. 1, 384. 24
J. Ham's house, 1,000 feet west of, on left bank, 2 miles below 295—2, 200 feet west of narrow lane, 10 feet south of wagon road, 400 feet from river; stone surmounted by iron pipe (Mo. R. Comm. b. m. 296—2), surface of stone.....	1, 301. 45
Rhodes's horse ranch, 600 feet west of house at, 100 feet west of road to river, on left bank, 1.5 miles below end of bottom, on small mound, 200 feet west of creek; stone surmounted by iron pipe (Mo. R. Comm. b. m. 297—2), surface of stone.....	1, 319. 52
Island No. 3, opposite foot of, 0.5 mile above head of bottom, on left bank, 3 miles below 297—2, 100 feet above small creek, 25 feet from edge of cut bank of river, 1,000 feet in front of Philip Turgeon's house; stone surmounted by iron pipe (Mo. R. Comm. b. m. 298—2), surface of stone.....	1, 305. 50
Island No. 1, opposite head of, on left bank, 0.25 mile above foot of bottom, in bottom 100 feet from river just back of single elm tree; stone surmounted by iron pipe (Mo. R. Comm. b. m. 299—2), surface of stone.....	1, 289. 31
Turgeon's red frame house, 0.5 mile below, on edge of bench land, 500 feet back of 299—2; stone surmounted by iron pipe (Mo. R. Comm. b. m. 299—3), surface of stone.....	1, 314. 51
Turgeon's red frame house, 3 miles below, on left bank, 75 feet above small creek, 125 feet from river bank, on small mound at head of bottom; stone surmounted by iron pipe (Mo. R. Comm. b. m. 300—2), surface of stone.....	1, 304. 24
Turgeon's red frame house, 6 miles below, on left bank, on small ridge 200 feet from river, 0.25 mile above where timber begins; stone surmounted by iron pipe (Mo. R. Comm. b. m. 301—2), surface of stone.....	1, 281. 69
Oldham's yellow frame house, 0.25 mile below, 300 feet west of log shack below creek, 1,000 feet back of b. m. 301—2, in first bench above creek; stone surmounted by iron pipe (Mo. R. Comm. b. m. 301—3), surface of stone.....	1, 311. 86

LAKE ANDES QUADRANGLE.

[Latitude 43°—48° 30'; longitude 98° 30'—99°.]

From point near Cedar Creek southeasterly along Missouri River to point 5.5 miles below White Swan.

Turgeon's red frame house, 9 miles below, on left bank, on low bench about 350 feet below small creek, 200 feet from river, just above end of bottom, 100 feet above log shack, road along bluffs back of bench mark; stone surmounted by iron pipe (Mo. R. Comm. b. m. 302—2), surface of stone.....	1, 287. 84
Warehouse on river bank, 0.5 mile above, on bottom opposite beginning of timber, 2,000 feet below head of bottom, 200 feet from river, on left bank, 1 mile below place where Senator Jones lives on Cedar Creek; stone surmounted by iron pipe (Mo. R. Comm. b. m. 303—2), surface of stone.....	1, 279. 34
Warehouse on river bank, 0.5 mile above, 700 feet back of 303—2, on edge of first bench; stone surmounted by iron pipe (Mo. R. Comm. b. m. 303—3), surface of stone.....	1, 305. 95

Warehouse on river bank, 2.8 miles below, about 0.5 mile above where river strikes bluffs, on narrow nose between two small coulees, just below large chalk-rock house at foot of bluffs, road from house straight out to river; stone surmounted by iron pipe (Mo. R. Comm. b. m. 304—2), surface of stone.....	Feet. 1, 310. 43
Wheeler Ferry, 1 mile above, on left bank, 3 miles below 304—2, on broken foothills, 100 feet from river, just above small coulee above head of bottom; stone surmounted by iron pipe (Mo. R. Comm. b. m. 305—2), surface of stone.....	1, 288. 44
Wheeler, 25 feet south of road to river from, on left bank, on first bench, 400 feet from river, 7 feet west of north-south wire fence; stone surmounted by iron pipe (Mo. R. Comm. b. m. 306—2), surface of stone.....	1, 269. 39
Wheeler, in northeast corner of courthouse yard; stone surmounted by iron pipe (Mo. R. Comm. b. m. 306—3), surface of stone.....	1, 310. 22
Wheeler, 3 miles below, on left bank, on first bench, 300 feet from river, 100 feet above where heavy timber begins, 1,000 feet south-east of sod shack and 600 feet below log shack; stone surmounted by iron pipe (Mo. R. Comm. b. m. 307—2), surface of stone.....	1, 268. 56
Wheeler, 3 miles below, about 0.5 mile back of 307—2, on gentle slope from bluff, on south side of road, 0.5 mile east of house of Matthew Biggins; stone surmounted by iron pipe (Mo. R. Comm. b. m. 307—3), surface of stone.....	1, 284. 48
Wheeler, 6 miles below, on left bank, at end of bottom, 1 mile below Pease Creek, 200 feet from river on foothills, 400 feet in front of small graveyard; stone over which is set a 3-inch ash post 4 feet high (pipe is gone), (Mo. R. Comm. b. m. 308—2), surface of stone.....	1, 287. 33
Chicot Island, opposite head of, on left bank, on low foothills 100 feet from river, just above head of bottom; stone surmounted by iron pipe (Mo. R. Comm. b. m. 309—2), surface of stone.....	1, 277. 78
Yankton Indian Reservation, 1 mile below upper end of, 300 feet from river, on left bank; stone surmounted by iron pipe (Mo. R. Comm. b. m. 310—2), surface of stone.....	1, 251. 20
Yankton Indian Reservation, 1 mile below upper end of, 0.8 mile back of 310—2, on first bench, several Indian shacks on low bluffs one-half mile back of bench mark; stone surmounted by iron pipe (Mo. R. Comm. b. m. 310—3), surface of stone.....	1, 258. 40
White Swan, 2.5 miles above, on flat bottom, on left bank, opposite head of small island, 2,000 feet above large grove of trees, 0.5 mile in front of a church on bench land, 350 feet from river and 25 feet south of road; stone surmounted by iron pipe (Mo. R. Comm. b. m. 311—2), surface of stone.....	1, 250. 26
White Swan, 400 feet from river, 25 feet west of southwest corner of store, on small mound, on left bank; stone surmounted by iron pipe (Mo. R. Comm. b. m. 312—2), surface of stone.....	1, 249. 38
Fort Randall, on right bank, 25 feet west of road to river, on first bench, at northwest corner of fort; stone surmounted by iron pipe (Mo. R. Comm. b. m. 312—1), surface of stone.....	1, 282. 10
White Swan, 2.5 miles below, 0.5 mile below beginning of "Dug-way" or head of bottom, on left bank, on knoll in mouth of small creek, 300 feet back of road up bottom is valley, 700 feet from river; stone surmounted by iron pipe (Mo. R. Comm. b. m. 313—2), surface of stone.....	1, 263. 06

NIOBRARA QUADRANGLE.

[Latitude 42° 30'—43° ; longitude 98°—98° 30'.]

From point 2.5 miles below White Swan southeast along Missouri River to
Niobrara.

White Swan, 5.5 miles below, on left bank, 300 feet from river, on level bottom about 500 feet above where the timber begins; stone surmounted by iron pipe (Mo. R. Comm. b. m. 314—2), surface of stone-----	Feet. 1, 243. 34
White Swan, 5.5 miles below, about 2,000 feet back of 314—2, on long, narrow ridge, like railway grade, road along top of ridge, two shacks and grove on ridge about 700 feet above bench mark; stone surmounted by iron pipe (Mo. R. Comm. b. m. 314—3), surface of stone-----	1, 247. 37
White Swan, 8.5 miles below, on left bank, on first bench back of timber, 300 feet above two Indian shacks, road to river from bench mark; large timber runs back toward bluffs 1,000 feet above and below bench mark, 0.8 mile from river; stone surmounted by iron pipe (Mo. R. Comm. b. m. 315—2), surface of stone-----	1, 241. 45
Yankton Indian Agency, 1.25 miles above, on left bank, on bluffs, at lower end of bottom just above where road leads up hill from bottom; stone surmounted by iron pipe (Mo. R. Comm. b. m. 316—2), surface of stone-----	1, 286. 20
Yankton Indian Agency, on left bank, in southeast corner of main office yard, 100 feet north of flagstaff; stone surmounted by iron pipe (Mo. R. Comm. b. m. 317—2), surface of stone-----	1, 261. 94
Yankton Indian Agency, 2.8 miles below, on left bank, on low bench about 800 feet from river; stone surmounted by iron pipe (Mo. R. Comm. b. m. 318—2), surface of stone-----	1, 234. 74
Yankton Indian Agency, 2.8 miles below, 800 feet back of 318—2, old slough bed 300 feet back of bench mark, 300 feet north of wagon road which crosses slough about 600 feet above bench mark; stone surmounted by iron pipe (Mo. R. Comm. b. m. 318—3), sur- face of stone-----	1, 235. 98
Yankton Indian Agency, 5.5 miles below, on left bank, on low bench in bottom, 500 feet from river, 20 feet above road to river, 1,800 feet in front of shack and grove, three large trees near bench mark; stone surmounted by iron pipe (Mo. R. Comm. b. m. 319—2), surface of stone-----	1, 231. 04
Yankton Indian Agency, 8.5 miles below, on left bank, on bottom about 400 feet from river, 1,000 feet above where heavy timber begins (probably in river); stone surmounted by iron pipe (Mo. R. Comm. b. m. 320—2), surface of stone-----	1, 230. 48
Shack with grove, 0.5 mile below, 0.25 mile above beginning of timber, on left bank, near edge of bank of old slough bed which runs out to river bank 1,000 feet above bench mark; stone surmounted by iron pipe (Mo. R. Comm. b. m. 320—3), surface of stone-----	1, 229. 79
Yankton Indian Agency, 11.5 miles below, on left bank, on ridge in bottom about 900 feet from river, just below where heavy timber leaves river and goes back toward bluffs; stone surmounted by iron pipe (Mo. R. Comm. b. m. 321—2), surface of stone-----	1, 227. 11

Chouteau Creek, 400 feet above, on left bank, on long mound or ridge in old slough bed, 400 feet below Indian shack on mound; stone surmounted by iron pipe (Mo. R. Comm. b. m. 322—2), surface of stone.....	Feet. 1, 239. 71
Chouteau Creek, 400 feet above, 0.25 mile back of 322—2, on bench land, 1,000 feet from Chouteau Creek where road crosses it, 700 feet in front of two shacks; stone surmounted by iron pipe (Mo. R. Comm. b. m. 322—3), surface of stone.....	1, 254. 33
Chouteau Creek, 3 miles below, 1,000 feet above where river strikes bluffs, on left bank, on nose from bluffs above small creek; stone surmounted by iron pipe (Mo. R. Comm. b. m. 323—2), surface of stone.....	1, 262. 52
Grove, 1,000 feet north of, 600 feet west of another grove, 1 mile below head of bottom, about 700 feet from river, on left bank; stone surmounted by iron pipe (Mo. R. Comm. b. m. 324—2), surface of stone.....	1, 218. 92
Niobrara, near, straight back from 324—2, at foot of bluffs, 65 feet back of road along bluffs; stone surmounted by iron pipe (Mo. R. Comm. b. m. 324—3), surface of stone.....	1, 228. 95

TYNDALL QUADRANGLE.

[Latitude 42° 30'—43°; longitude 97° 30'—98°.]

From Niobrara northeast and east along Missouri River to point 4.5 miles above Yankton.

Running Water, on left bank, on low bluff above coulee, opposite ferry landing, 100 feet northwest of freight house; stone surmounted by iron pipe (Mo. R. Comm. b. m. 326—2), surface of stone.....	1, 243. 95
Running Water, 75 feet east of southeast corner of Henry Brooks's store, on left bank; stone surmounted by iron pipe (Mo. R. Comm. b. m. 326—3), surface of stone.....	1, 253. 53
Running Water, 2.25 miles below, in bottom, on left bank, on little bench, 0.5 mile from river, several houses in coulee straight back from bench mark; stone surmounted by iron pipe (Mo. R. Comm. b. m. 327—2), surface of stone.....	1, 211. 12
Springfield, on left bank, 75 feet from edge of cut bluff bank, 500 feet south of Indian school, just east of fence; stone surmounted by iron pipe (Mo. R. Comm. b. m. 329—2), surface of stone.....	1, 281. 82
Springfield, southwest corner of high-school yard; stone surmounted by iron pipe (Mo. R. Comm. b. m. 329—3), surface of stone.....	1, 271. 72
Springfield, 3.5 miles below, on left bank, on bench land, just at upper side of mouth of Silver Creek Valley, road leads out of bottom into valley 15 feet east of bench mark; stone surmounted by iron pipe (Mo. R. Comm. b. m. 330—2), surface of stone.....	1, 206. 80
Bon Homme, 1.25 miles below, on left bank, back of ferry landing, 100 feet back of J. M. Cordle's house, 100 feet southeast of bridge across coulee; stone surmounted by iron pipe (Mo. R. Comm. b. m. 332—2), surface of stone.....	1, 200. 68
Bon Homme, 1.25 miles below, 800 feet back of 332—2, on slope on lower side of creek, in pasture; stone surmounted by iron pipe (Mo. R. Comm. b. m. 332—3), surface of stone.....	1, 210. 69

Mennonite Village, 0.8 mile below, on left bank, on slope to bottom just above third coulee below village, 100 feet south of road at foot of bluffs; stone surmounted by iron pipe (Mo. R. Comm. b. m. 333—2), surface of stone-----	Feet. 1, 204. 90
Antelope Point, 4 miles below, on left bank, on first bench 300 feet from river, 1,000 feet below creek, at beginning of bottom, land belongs to Mr. Ulrich; stone surmounted by iron pipe (Mo. R. Comm. b. m. 335—2), surface of stone-----	1, 203. 78
Antelope Point, 4 miles below, 0.25 mile back of 335—2, at foot of bluffs on slope, 50 feet above main wagon road, on Ulrich's land; stone surmounted by iron pipe (Mo. R. Comm. b. m. 335—3), surface of stone-----	1, 274. 50

YANKTON QUADRANGLE.

[Latitude 42° 30'—43°; longitude 97°—97° 30'.]

From point 4.5 miles above Yankton easterly and southeasterly along Missouri River to point 3 miles above Vermillion.

Yankton, 4.5 miles above, on left bank, 0.8 mile in front of Yankton Cement Works, 300 feet below timber to river; stone surmounted by iron pipe (Mo. R. Comm. b. m. 336—2), surface of stone-----	1, 179. 30
Yankton, 4.5 miles above, about 0.5 mile back of 336—2, 4 feet south of east-west fence, 500 feet west of east corner of fence, 0.25 mile in front of cement works at foot of bluffs; stone surmounted by iron pipe (Mo. R. Comm. b. m. 336—3), surface of stone-----	1, 186. 92
Yankton, in southwest corner of courthouse yard at corner of Fifth Street and Douglass Avenue, on left bank; stone surmounted by iron pipe (Mo. R. Comm. b. m. 337—2), surface of stone-----	1, 196. 75
Yankton, 3 miles below, on left bank, 8 feet south of main road from Yankton to lower bridge across James River, at point about 0.5 mile west of where road leaves old grade, in first clear strip of bottom below Yankton; stone surmounted by iron pipe (Mo. R. Comm. b. m. 338—2), surface of stone-----	1, 169. 16
Yankton, 3 miles below, 1,000 feet back of 338—2, just south of fence around cornfield, 800 feet in front of Mr. Frazier's house; stone surmounted by iron pipe (Mo. R. Comm. b. m. 338—3), surface of stone-----	1, 170. 62
James River, 350 feet below mouth of, on left bank, 1,000 feet from river, 0.5 mile south of house and grove of Mr. Walker, 0.5 mile west of William Esmay's house, on land of Mr. Dougherty, 600 feet south of main road to Yankton; stone surmounted by iron pipe (Mo. R. Comm. b. m. 340—2), surface of stone-----	1, 160. 96
James River, 0.25 mile due north of, near fence corner; stone surmounted by iron pipe (Mo. R. Comm. b. m. 340—3), surface of stone-----	1, 160. 95
St. Helena Island, opposite a point 0.5 mile below head of, on left bank, on flat bottom, 1,000 feet from river, 700 feet northwest of house and grove; stone surmounted by iron pipe (Mo. R. Comm. b. m. 342—2); surface of stone-----	1, 159. 16
St. Helena Island, 1,000 feet back of a point opposite a point 0.5 mile below head of, 15 feet north of road to St. Helena Ferry, 400 feet east of small board shack, 0.5 mile west of frame house of Mar-keen Nelson, 2.8 miles due west of large brick house of Peter	

Smith; stone surmounted by iron pipe (Mo. R. Comm. b. m. 342—3), surface of stone-----	Feet. 1, 160. 51
St. Helena Island, opposite foot of, 1,500 feet from river, on left bank, just east of line between Clay and Yankton counties, 0.8 mile south of brick house of Peter Smith, 0.5 mile southeast of white frame house of H. Smith; stone surmounted by iron pipe (Mo. R. Comm. b. m. 343—2), surface of stone-----	1, 157. 04
Vermilion, 7.5 miles above, on left bank, 0.25 mile from river, above beginning of timber, 400 feet back of sawmill, 20 feet east of road to river, 1 mile above high sandhills, on river bank; stone surmounted by iron pipe (Mo. R. Comm. b. m. 345—2), surface of stone-----	1, 149. 43
Vermilion, 7.5 miles above, 0.25 mile back of 345—2, in pasture east of road, opposite house of Chris Larson, 1,000 feet south of main road to Vermilion; stone surmounted by iron pipe (Mo. R. Comm. b. m. 345—2), surface of stone-----	1, 152. 30

ELK POINT QUADRANGLE.

[Latitude 42° 30'—43°; longitude 96° 30'—97.°]

From point 3 miles above Vermilion southeasterly along Missouri River to point 4 miles south of Jefferson.

Vermilion, 3 miles above, on left bank, 300 feet east of house of Ole Temple, 1,300 feet north of main road from Vermilion; stone surmounted by iron pipe (Mo. R. Comm. b. m. 346—2), surface of stone-----	1, 146. 20
Vermilion, in northwest corner of courthouse yard; stone surmounted by iron pipe (Mo. R. Comm. b. m. 347—2), surface of stone-----	1, 222. 95
Vermilion, near, on left bank, 0.5 mile from river, just below mouth of old cut-off slough, 1,800 feet north and 800 feet northeast of two white houses, in pasture land; stone surmounted by iron pipe (Mo. R. Comm. b. m. 348—2), surface of stone-----	1, 136. 98
Vermilion, 3 miles below, 1,600 feet from river, on left bank, just back of timber, 800 feet northeast of house, wagon road from bench mark straight north to railway, 1 mile south of schoolhouse; stone surmounted by iron pipe (Mo. R. Comm. b. m. 349—2), surface of stone-----	1, 136. 46
Burbank, 25 feet west of schoolhouse, on left bank, 1,000 feet north of railway; stone surmounted by iron pipe (Mo. R. Comm. b. m. 350—2), surface of stone-----	1, 133. 72
Burbank, 0.3 mile back of 350—2, just west of main road north from Burbank, at southwest corner of first grove along road; stone surmounted by iron pipe (Mo. R. Comm. b. m. 350—3), surface of stone-----	1, 132. 13
Donnelly school (District No. 12), 1 mile northwest of, in NE. $\frac{1}{4}$ sec. 7, T. 91, R. 50, on flat bottom, on left bank, 0.8 mile north of house of James McGonnagle, 0.5 mile northeast of J. W. Hammond's white house and grove; stone surmounted by iron pipe (Mo. R. Comm. b. m. 351—2), surface of stone-----	1, 128. 28
Gude Djorlais house, 180 feet southeast of, 0.25 mile from river, 3 miles below 351—2, on left bank, in edge of cornfield, south side of road; stone surmounted by iron pipe (Mo. R. Comm. b. m. 352—2), surface of stone-----	1, 128. 88

Gude Djorlais house, 0.25 mile back of 352—2, 150 feet southeast of frame house; stone surmounted by iron pipe (Mo. R. Comm. b. m. 352—3), surface of stone.....	Feet. 1, 128. 22
Elk Point, 1.25 miles west of, on left bank, 200 feet north of D. W. Carter's house, 2 miles from river; stone surmounted by iron pipe (Mo. R. Comm. b. m. 353—2), surface of stone.....	1, 123. 89
Elk Point, southeast corner of courthouse yard; stone surmounted by iron pipe (Mo. R. Comm. b. m. 353—3), surface of stone.....	1, 123. 11
Elk Point, 4.5 miles south of, on left bank, on road to Ponca Ferry, in southwest corner of Pleasant Grove (District No. 20) school yard, opposite place where A. S. Bland lives; stone surmounted by iron pipe (Mo. R. Comm. b. m. 354—2), surface of stone.....	1, 119. 83
Ponca Ferry, 0.5 mile north of, on left bank, 1,000 feet east of main road to Elk Point, on Stough Farm, 200 feet south of farm buildings, Clarence Cheeny tenant; stone surmounted by iron pipe (Mo. R. Comm. b. m. 355—2), surface of stone.....	1, 120. 23
Ponca Landing, 3.5 miles below, opposite b. m. 356—1, on left bank, 1 mile from river, on west side of road to river, on opposite side of road from W. R. McKinsey's house; stone surmounted by iron pipe (Mo. R. Comm. b. m. 356—2), surface of stone.....	1, 110. 30
Jefferson, 3 miles west of, 50 feet northwest of schoolhouse at crossroads; stone surmounted by iron pipe (Mo. R. Comm., b. m. 356—3), surface of stone.....	1, 116. 96
Jefferson, near, on left bank, 6 miles by river, 2 miles across from 356—2, near fence corner, 30 feet west of road along river bank, 800 feet below house; stone surmounted by iron pipe (Mo. R. Comm. b. m. 357—2), surface of stone.....	1, 108. 49
Yellow house and grove, 0.8 mile below, 2.5 miles below 357—2, on left bank, north side of road, 200 feet west of bridge across slough, 400 feet from river; stone surmounted by iron pipe (Mo. R. Comm. b. m. 358—2), surface of stone.....	1, 108. 92
Jefferson, northwest corner of school yard, blacksmith's shop across street; stone surmounted by iron pipe (Mo. R. Comm. b. m. 358—3), surface of stone.....	1, 109. 18
Jefferson, 4 miles south of, on left bank, on north side of road, opposite house of A. P. Keendy, John Gibson owns land, 75 feet north of section line, 0.25 mile from river, at end of big willow bar in bend; stone surmounted by iron pipe (Mo. R. Comm. b. m. 359—2), surface of stone.....	1, 107. 83
McCook, 400 feet south of station, on left bank, 130 feet back of schoolhouse; stone surmounted by iron pipe (Mo. R. Comm. b. m. 360—2), surface of stone.....	1, 105. 08

APPENDIX C.

SECONDARY ELEVATIONS.

Secondary elevations from records and topographic maps of the United States Geological Survey, including altitudes of well-known summits and other useful elevations, are given below. These elevations are approximate only and should not be used for accurate work.

Locality.	Quadrangle.	County.	Elevation.
Antelope Butte.....	Belle Fourche.....	Butte.....	<i>Fect.</i> 3,519
Baldy Peak.....	do.....	Lawrence.....	3,610
Battle Mountain.....	Oelrichs.....	Fall River.....	4,431
Bear Butte.....	Rapid.....	Meade.....	4,422
Crow Peak triangulation station.....	Deadwood.....	Lawrence.....	5,785
Custer Peak triangulation station.....	do.....	do.....	6,794
Deer Mountain.....	do.....	do.....	6,647
Elkhorn Peak triangulation station.....	do.....	do.....	4,520
Harney Peak triangulation station; the highest point in State yet determined.....	Harney Peak.....	Pennington.....	7,242
Little Crow Peak.....	Deadwood.....	Lawrence.....	5,888
Lookout Peak triangulation station.....	do.....	do.....	4,485
Miller Butte triangulation station.....	Belle Fourche.....	Butte.....	3,002
Mud Butte triangulation station.....	do.....	do.....	3,295
Parker Peak.....	Edgemont.....	Fall River.....	4,848
Piedmont Butte.....	Rapid.....	Meade.....	4,173
Richmond Hill.....	Deadwood.....	Lawrence.....	6,055
St. Onge Peak.....	Belle Fourche.....	do.....	3,691
Spearfish Peak.....	Deadwood.....	do.....	5,794
Sugarloaf Mountain.....	do.....	do.....	6,045
Susie Peak.....	St. Onge.....	Butte.....	3,242
Terry Peak triangulation station.....	Deadwood.....	Lawrence.....	7,069
Twin Buttes.....	Belle Fourche.....	Butte.....	3,043
Two Top Peak.....	do.....	do.....	3,732
White Rock.....	Deadwood.....	Lawrence.....	5,286
Whitewood Peak triangulation station.....	do.....	do.....	5,138

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